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Rehabilitasie

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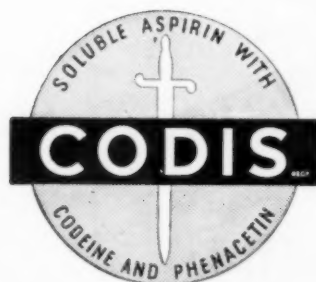
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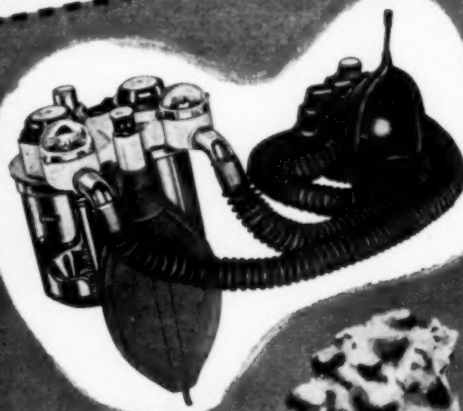
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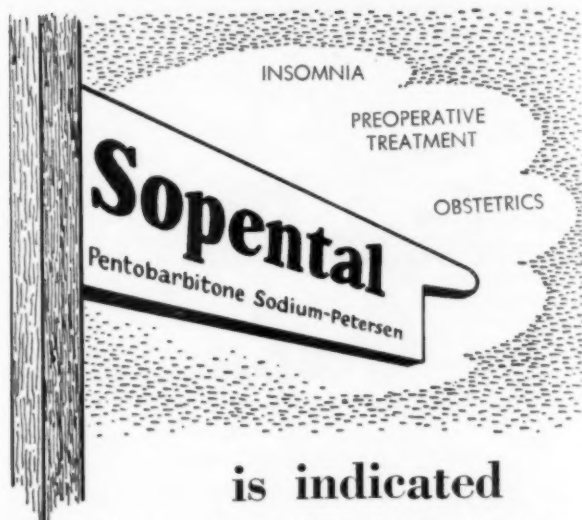
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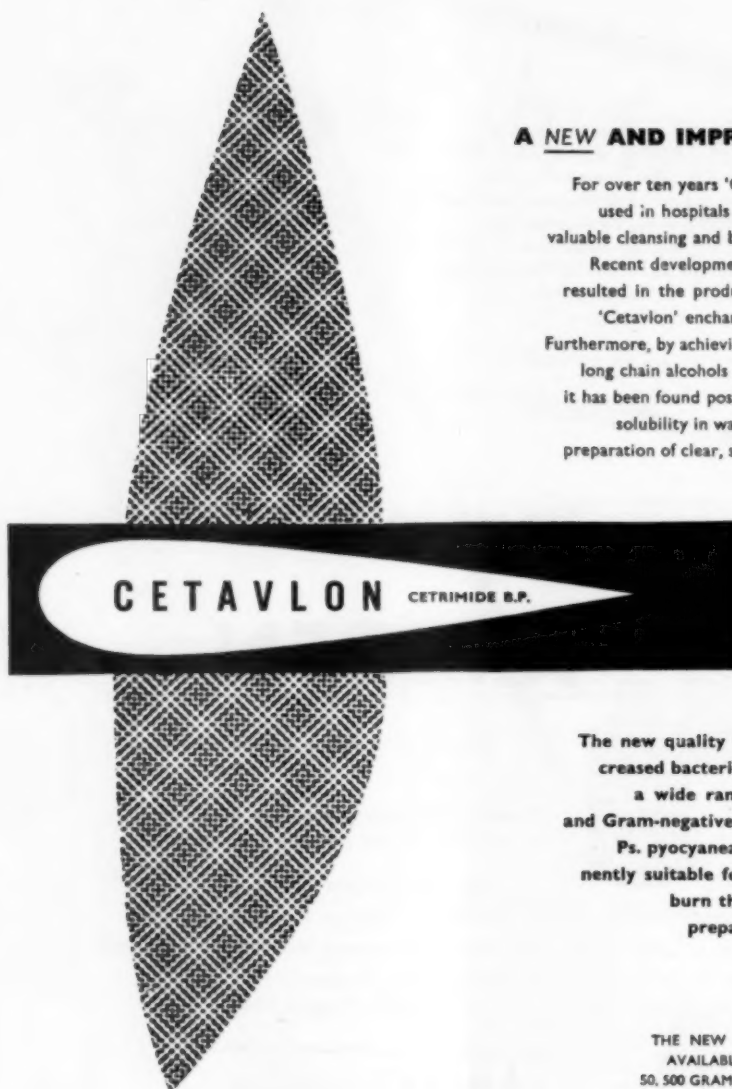
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REHABILITATION: THE RELATIVE RESPONSIBILITIES OF COMMERCE, INDUSTRY AND MEDICINE*

C. J. GOEDVOLK, M.B., CH.B., D.P.H., D.I.H.

Medical Superintendent, Chamber of Mines Hospital, Johannesburg

That Commerce, Industry and Medicine should feel themselves impelled to meet on the common ground afforded by this Plenary Session must surely indicate that there is a problem common to all three to be faced with vision and courage. I believe that at the end of our deliberations not only will there be a better mutual understanding of the problem, but some practical means will be found to cope with it. There will also be more appreciation of the vision that prompted the Congress Committee to make history by arranging the meeting of Commerce and Industry with Medicine and taking the bold step of devoting both Plenary Sessions to the subject of Rehabilitation.

In spite of its long historical background, the wealth of information available and the experiences of many persons in many lands, any attempt to delineate the boundaries of the field of rehabilitation or to define what constitutes a handicap is a task indeed.

Health and disease to a large extent determine human capacity and human welfare. Health may not be a goal in itself, but disease or disablement is a shackle that often prevents man from accomplishing his task on earth. Through the ages the significance of disease has changed, and with it the position of the handicapped in society. Science has given man power over nature, and more and more natural forces are subjugated to serve man's purposes. That suffering still occurs is largely because science and social planning have not yet been adequately applied to the problem. In a world that is ruled by iron economic necessity, unemployment is responsible for a vast amount of economic and mental distress. Thus disease creates poverty and poverty disease, the link is closed, and the vicious circle is complete. To break this circle we must fight disease with every scientific means available, rather than wait passively for social and economic adjustments to overcome poverty and perhaps guarantee every family sufficient food and a decent home.

The term 'rehabilitation' is today applied to a multiplicity of projects; to the physician it has long meant

'the restoration of the handicapped to the fullest physical, mental, social, vocational and economic usefulness of which they are capable', but it is doubtful whether this defines the task completely. A phrase, 'the third phase of medicine', has become popular. It means that which takes the patient from the bed to the job—controlled activity, which as an adjunct to definitive treatment offsets the 'deconditioning' phenomena of bed-rest and the harmful psychologic sequelae of purposeless inactivity. It has been proved that this is necessary, and can, in some cases, break the vicious circle, but it is open to question whether concentration on this aspect alone will solve the problem. It would obviously be better to prevent the vicious circle.

There is an undoubted need for the development and integration of a system to deal with the handicapped. Because of lack of statistical information we cannot accurately assess the numbers of persons who could benefit by rehabilitative measures. We can, however, from available statistics and by analogy with the general pattern found in other countries, attempt to estimate our problem.

The need for rehabilitative measures arises in the main from impairment by disease and from injury by accident.

INJURY BY ACCIDENT

Accidents occur in all walks of life. Domestic and sporting accidents account for approximately 55% of the incidence, industrial accidents for 30% and road accidents for 15%.

The National Road Safety Organization reports casualties from road accidents to be:

Year	Fatal	Injured
1944	508	7,507
1945	595	8,283
1946	813	13,137
1947	944	15,669
1948	964	16,555
1949	983	17,284
1950	952	16,545
1951	1,116	17,637
1952	1,055	18,169
1953	1,186	17,927

* The opening address in a symposium on Rehabilitation held in plenary session at the South African Medical Congress, Port Elizabeth, June 1954.

Statistics supplied by the Workmen's Compensation Commissioner show the incidence of injuries arising out of employment in terms of the Workmen's Compensation Act to be:

ACCIDENTS ANALYSED: STATISTICAL YEAR 1951

	State Accident Fund	Mutual Assoc- iations	Exempted Municip- alities	Provincial Adm., Govt. Depts. and S.A.R.	Total
A. Temporary Total Disablement and Medical Aid only					
Europeans	30,247	8,324	1,626	15,686	55,883
Asiatics	1,704	74	175	37	1,990
Coloured	13,956	1,436	7	1,312	16,711
Natives	47,364	11,275	2,112	6,101	66,852
Total	93,271	21,109	3,920	23,136	141,436
B. Permanent Disablement					
Europeans	1,067	605	50	861	2,583
Asiatics	62	8	0	3	73
Coloured	442	27	1	39	509
Natives	2,744	11,968	35	261	15,008
Total	4,315	12,608	86	1,164	18,173
C. Fatal					
Europeans	46	35	4	58	143
Asiatics	8	0	7	0	15
Coloured	27	3	0	8	38
Natives	397	583	4	43	1,027
Total	478	621	15	109	1,223
Grand Total	98,064	34,338	4,021	24,409	160,832

ANALYSIS SHOWING EXTENT OF DISABLEMENT: STATISTICAL YEAR 1951

Extent of Disablement	Europeans	Asiatics	Coloured	Natives	Total
Medical Aid only	20,760	653	5,268	12,904	39,585
Temp. disablement	35,123	1,337	11,443	53,948	101,851
Perm. disablement	2,583	73	509	15,008	18,173
Fatal	143	15	38	1,027	1,223
Total 1951	58,609	2,078	17,258	82,887	160,832
Total 1950	57,080	1,905	13,876	80,634	153,495

To these figures has to be added the number of persons injured at work but not entitled to the benefits of the Workmen's Compensation Act; of these detailed records are not available. There are also no records of domestic and sporting accidents. Assuming that the 179,585 casualties from recorded road and industrial accidents in 1951 represent 45% of the total casualties for all races from all accidents in 1951, then we find that the probable number of casualties in 1951 was 399,077. If, furthermore, a severity rate comparable to that of industry applied, then approximately 300,000 persons would have sustained some degree of disablement, and could have benefited from some form of rehabilitative measure in addition to definitive medical treatment.

IMPAIRMENT BY DISEASE

The estimation of persons suffering from chronic disease or physical impairment resulting from causes other than injury is more difficult because we have no morbidity statistics.

A National Health Survey in the U.S.A. in 1935/36

found chronic disease or physical impairment, on a given day, to have the following incidence:

Under 5 years	34 persons per 1,000
5-19 years	70 persons per 1,000
20-44 years	177 persons per 1,000
45-64 years	309 persons per 1,000
65 years and over	515 persons per 1,000

Total and permanent disablement occurred in the following frequency:

Under 5 years	1.6 persons per 1,000
5-19 years	4.0 persons per 1,000
20-44 years	8.0 persons per 1,000
45-64 years	22.0 persons per 1,000
65 years and over	75.0 persons per 1,000

In Hagerstown, Maryland, U.S.A., a 25-year study of 2,000 white families by the Federal Public Health Service revealed the following incidence of some chronic illness or major disability at the ages shown:

At age 25 years	35 persons per 1,000
At age 45 years	100 persons per 1,000
At age 60 years	250 persons per 1,000
At age 80 years	500+ persons per 1,000

These findings cannot be considered peculiar to the U.S.A. Reports from other countries not only confirm them but tend to show that they possibly underestimate present-day distribution.

On the assumption that the U.S.A. rates also apply to the European population of South Africa, the probable magnitude of the problem in the Union is shown by the following figures (1946 census):

COMPUTED INCIDENCE OF CHRONIC DISEASE AND PHYSICAL IMPAIRMENT

Age Group	European Population	Incidence	
		Chronic Disease	Permanent Total Disablement
Under 5 years	268,574	9,131	430
5-19 years	666,242	46,637	2,665
20-44 years	898,878	159,101	7,191
45-64 years	391,206	120,883	8,606
65 years and over	146,544	75,470	10,991
Total	2,371,444	411,222	29,883

Mr. Bernard M. Baruch, with insight not unusual to him, looked upon the increase in man's life-span as having even more profound medical, economic and social implications than atomic energy or flights at supersonic speeds. If we assume that the average expectation of life for Europeans in South Africa at the turn of the century was 45 years, then we find that in 1946 it had increased by approximately 18 years for men and 23 years for women. During this same period the increase in the European population of the Union was 112%, but what is more significant is the increase of persons in the age-group 60-64 years by 488%, and those aged 65 years and over by 572%.

The 1951 census returns will most probably show a further increase. This presents us with a problem of magnitude and one that is increasing rapidly. Note particularly that these estimates apply only to the white population. The increase in the Asiatic, Coloured and Bantu sections of our population is still greater, even if the number of persons in the older age-groups is less.

In assessing the extent of the disability problem, we must not lose sight of acute illness. This vast field,

probably accounting for 80% of lost working time, and not infrequently the breeding ground of chronic disease, is barely considered as coming within the field of rehabilitation. In it no organized attempt has been made to apply the proved values of rehabilitation measures.

The great advances in the field of medicine played no small part in nullifying the swift killing power of the acute and formidable communicable diseases, and so paved the way to a longer life-expectancy and an increasing prevalence of chronic disease and disablement. Medicine has not yet achieved specific measures to prevent aging or to cure many of the chronic diseases, but it is to medicine that we must now look for means of enabling the ill and the handicapped to work as effectively as possible within their capacity.

In the battles against death-dealing infections the general practitioner was the first line of defence. In attacking the problem we are now faced with, he will have to play a similar part. We have to deal with the slow insidiousness of chronic disease, the resulting physical impairment and the increasing toll on human life, happiness and welfare brought about by our very manner of living and working; this will demand changes both in the approach and in the method of the practice of medicine.

THE APPROACH TO REHABILITATION

Galen's 2,000-year-old teaching, 'Employment is Nature's best physician', must not only be preached but practised. The Hippocratic statement, 'Exercise strengthens and inactivity wastes', needs no further proof. Rest in bed is necessary, but its 'deconditioning' effects must be ever present in the mind of the doctor, and positive efforts must be made to counteract it. In this respect there should be a re-orientation of medical outlook and practice, particularly in medical teaching. On the doctor, and especially on the general practitioner, will depend the acceptance of this concept by the patient, by organized labour and by the employer. Absenteeism or 'loss of time' is a major factor in lessening income and production, and may well be the first step on the path to economic distress and poverty, as well as the beginnings of the canker that saps the 'will to do'. The doctor's attitude to capacity for work must ultimately be reflected by the individual patient. The doctor can and should play a leading part not only in determining the capacity for work in the chronically ill and physically impaired, but also in the vast field of those temporarily ill and injured.

Assessment of capacity for work is a complex problem. It is unfortunately also a field hardly touched on in medical training. One is entitled to ask how often or how accurately it is considered in medical practice, whether by the general practitioner or the specialist. The practice of symptomatic treatment, so common today in the definitive field, sees its counterpart in the readiness with which the doctor will certify 'unfit for work' for a shorter or a longer period with scant regard to the real problem, namely the demand made by work on the patient.

There is no simple formula even on physiologic principles for evaluating capacity for work or the requirements of a job. There are a host of factors,

personal and environmental, not necessarily related to physical condition, which might determine physiologic capacity. Psychological reactions and incentives to work are even more difficult to determine. Present techniques for measuring job requirements and physical and mental capacities are only approximate guides and there is room for substantial error both in the determination of the requirements of the job and in the physical evaluation and selective placement of the impaired as well as the unimpaired. The two most important factors in estimating capacity for work are the diagnostic acumen of the doctor and his knowledge of the job requirement. In both these aspects basic medical training leaves much to be desired, and in the practising field doctors do little to qualify themselves to deal with these aspects. It is questionable whether either employers or employees expect or will accept such a role from their doctor. It does seem, however, that in and about these factors lies the possibility of preventing the closing of the link in the vicious circle. Means must be devised to condition the impaired to the 'will to do', to persuade the employer to the 'will to try', and to encourage the doctor to persevere.

Rehabilitation can never be a 'one-man job'. It concerns not only the impaired individual, but also the persons, facilities and factors that are necessary to restore him to that state in which he can, either for the first time or once again, tackle his task on earth.

The practice of rehabilitation is rooted in the basic philosophy that the doctor's responsibility begins with the first evidence of illness or impairment of function, continues through the period of definitive treatment, and ends only when the patient has been re-trained in the belief, the desire and the ability to live productively with what physical and mental powers he has retained. The correct orientation of medical teaching and practice of such a philosophy should not present insurmountable difficulties. Successful achievement does, however, depend on the nature, type and extent of the facilities available.

Although our institutions for medical care compare favourably with the best in the world, they fall far short in the basic necessities for successful and complete rehabilitation. These institutions are in several respects debarred by law from giving the treatment even where they have the resources. The hospital must always be the focal point from which will spread the several paths to true rehabilitation. If the doctor is to play his part successfully, then his access to the facilities and resources of the hospital must be encouraged, not limited. We shall hear again and again in these sessions how existing hospital and ancillary services can be put to greater and more effective use. It is true that the practice of medicine needs a degree of re-orientation to present-day demands, but it is equally true, and even more urgent, that there should be adequate provision of facilities and resources where these practices can be effectively applied. Medicine has contributed nobly to the rehabilitation of the impaired from the beginning of history and will continue to do so, but the resources necessary cannot be provided by the doctor alone, and his efforts and enthusiasm cannot be maintained unless the employer absorbs with goodwill the end-product of his effort. The rehabilitated

do not seek charity. There is ample proof today that the work-performance of impaired workers compares more than favourably with that of the unimpaired, and—what is of real significance—there is no greater frequency of 'lost time' or of injury among the impaired when in employment. Given reasonable selective placement, the impaired worker seems to produce at a slightly better rate. It is, therefore, not charity that is asked from the employer in the vast majority of instances, but a change of attitude, a break-away from the 'perfect anatomical specimen' concept of man, and a realization that the impaired can be an economic producer and not just a consumer.

It can be reasonably assumed that at any given time

more than half a million persons in South Africa require some form of rehabilitation. Sporadic attempts at some measures of rehabilitation are at present made at a few institutions, but, generally speaking, there is no integrated system nor are there facilities for applying such measures. What is required is a concerted effort by employers, who will be faced with an increasing shortage of man-power, and by doctors, who, with minor re-orientation in the application of their art, will be able to make Provincial and Union authorities alive to the great need for facilities for restoring the handicapped to gainful employment. It is to be hoped that out of the deliberations of this Congress will be born a National Council for Rehabilitation to ensure that facilities are provided.

PLENARY SESSION RESOLUTION: NATIONAL REHABILITATION COUNCIL SUGGESTION ACCEPTED BY GOVERNMENT

After a full discussion on the subject of Rehabilitation at two plenary sessions of the 39th South African Medical Congress at Port Elizabeth on 22 and 24 June 1954 (with the President, Dr. J. P. Collins in the Chair and Dr. M. G. Woolf acting as Secretary) the following resolution was adopted:

That this 39th Medical Congress of the Medical Association of South Africa, having considered the wastage of man-power, the suffering of humanity and the needless expense arising out of the many diverse fields of disablement, commends to the Government the urgency of establishing a National Rehabilitation Council. Amongst others important functions of such a council would be:

(a) To accept the offered co-operation of commerce and industry.

(b) To advise the Minister and existing voluntary bodies in the respective national rehabilitation policy in respect of physically and mentally handicapped to ensure unity of purpose.

(c) To advise on practical ways in which the efforts of both State and voluntary enterprise can be effectively correlated in conformity with the formulation of a national policy referred to in (b).

(d) To advise on gaps in the field of rehabilitation and on ways to bridge such gaps, including executive action by the Council itself to provide the necessary services where these are lacking.

(e) To give attention with the appropriate health and hospital authorities to the health and medical aspects of rehabilitation, whether in the field of Union Government or Provincial departments, to encourage research and sociological service in various fields concerned with the problem of rehabilitation. To respect the autonomy of existing national voluntary bodies and Government departments in this field.

(f) To advise the Minister concerned on legislation in the respective rehabilitation of handicapped persons, more particularly of comprehensive consolidating legislation.

(g) Finally, we pledge the Association in offering technical assistance such as lies within its power in the planning and the working of such a Council.

The Journal is informed that the Minister of Labour has decided to proceed with the establishment of a National Rehabilitation Council.

The papers read in the symposium are published in this issue of the *Journal*.

Mr. R. Gluckman, Clinical Psychologist, in the course of the discussion, said that an obstacle that had to be overcome in cases with psychological disabilities, or alcoholism, was the stigma attaching to these conditions in the minds of the lay public. Mr. Gluckman also referred to the concept of 'recognition', and cited the Hawthorn experiments (U.S.A.) in exemplification. In an experiment to find how to increase productivity a certain number of operatives from a main floor of a factory were put into an experimental set. They were subjected in succession to better lighting and ventilation, to higher wages, to time and motion study, to an hourly rest-pause, and with each 'improvement' the production

rate went up and up. Having apparently solved their problem the experimenters again mixed the experimental set of men (with their added advantages) with the other workers in the main floor. Immediately their output began to fall to that of the level of the rest; they were put back as an isolated experimental group and again the output went up and up. The discovery was that the individual cannot bear to deviate away from the group concepts and the security which is so important to him; even additional benefits in this experiment were not sufficient to offset isolation from the group. In the 'set' he was given 'recognition' by the management, by the medical men concerned, and by an experimenter of unique personality; in the workshop he was just operative number so-and-so. Recognition is the most important factor of all in rehabilitation. It must be immediate, not given on a long-term basis. In dealing with the maladjusted 'recognition' can only be effectively applied through the group-approach of a team of workers, as is being done at Tara Hospital.

Dr. F. W. P. Cluver, M.P.C., referred to the gap that existed between the hospital and the rehabilitative process. They were trying to divide the indivisible. The patient has finished with the hospital but is not fit to resume his occupation. He is now like Mahomet's coffin, floating between heaven and earth. He flounders around, and, if he is fortunate, may be picked up by a social worker who may introduce him to the Social Welfare Department, which is a Union Government activity quite separate from the hospital, a Provincial activity. The gap should be bridged. Rehabilitation should start at the hospital, but the official set-up does not facilitate this.

In the discussion on the second day, Mr. Paul Sykes of SANTA spoke on rehabilitation in tuberculosis, with particular reference to the 'settlement' scheme, which he said was a happy venture of co-operation between Government and voluntary organizations. Tuberculosis was a family disease and it was the patient and family that had to be rehabilitated. From his settlement in Natal 67% of the patients who had been discharged were back in normal home life and work life. Rehabilitation should start at the hospital, and the doctor should lay out a programme for the patient from the first. Tuberculosis is becoming a short-term disease by comparison, and the insistence on absolute rest for weeks and months, with its deleterious effect on morale and psychology, is now less. Mr. Sykes expressed disbelief in sheltered employment. He considered that the chronics, cripples etc. who need it should be catered for as members of a family unit. For this purpose the settlement idea was best. Speaking of co-operation with Industry he said that they had been very successful in Durban in getting 'healed' tuberculosis cases 'placed' in factories.

Mr. S. M. Lewis, Workmen's Compensation Commissioner, said that a rehabilitation association for workmen had been formed and incorporated to deal with workmen injured on duty. The funds come from voluntary assessment-payers in Commerce and Industry (e.g. municipalities, State departments, railways, gold mines, building industry). Grants for medical rehabilitation are to be made to the workman only if he is sent by his family doctor. Only medical aid will rank for assistance. The new organization will probably come into operation at the end of 1955.

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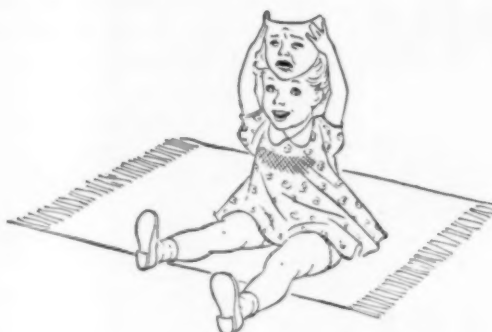
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South African Medical Journal

Suid-Afrikaanse Tydskrif vir Geneeskunde

VAN DIE REDAKSIE

REHABILITASIE

Hierdie uitgawe van die *Tydskrif* handel hoofsaaklik oor rehabilitasie—'n onderwerp waaraan geneeskundige en maatskaplike literatuur in die laaste jare besonder aandag geskenk het. Rehabilitasie is op verskeie maniere omskrywe: een definisie, wat nasorg benadruk, bestempel dit as die herstel van afwykendes tot die volste beroeps-, liggaamlike, geestelike, maatskaplike en ekonomiese bruikbaarheid waartoe hul in staat is. In alle vertakings van die geneeskunde bestaan daar egter 'n kenlike behoefte aan rehabilitasie. Die onteenseglike doelwit van behandeling is om die pasiënt tot normaal te herstel hetsy die afwyking die gevolg van siekte of besering is. Dikwels, soos baiekeer in akute gevalle, kan die pasiënt, wat deur *vis medicatrix naturae* of deur terapie genees is, ongeskonde sy plek weer in die lewe volstaan; maar in ander gevalle, vernameamlik die chroniese gevalle, is die pasiënt nie na verloop van mediese behandeling geheel en al in liggaam of gees herstel nie en bly hy op beroeps-, ekonomiese en sosiale gebied gekniehalter. Dit is die lotgeval van hierdie ongelukkiges wat die behoefte aan rehabilitasie beklemtoon.

Die laaste tyd het die kwessie van rehabilitasie van spesiale gevalle, soos die kreupeles, die verlamdes, die blindes, die doofstommes, die verstandelik agterlikes, die kroniese teringlyers en die bejaardes, opvallende publieke aandag geniet. Verskeie organisasies, meesal onder geneeskundige leiding, het rehabilitasieskemas vir hierdie persone ingestel. Die vraagstuk het nog wyer aandag geniet as gevolg van rehabilitasie-maatreëls wat aangewend was om verminkte teruggekeerde soldate van die Tweede Wêreldoorlog te help.

Groot materiële verlies word deur diegene gely wat weens besering of siekte nie hul beroep kan beoefen nie. Hierdie verlies strek ook tot die werkgewer en dit het 'n ernstige uitwerking op die staatshuishoudkunde. Die belang wat georganiseerde nywerheid en handel in die vraagstuk stel, word aangedui deur die aanwesigheid van hul verteenwoordigers by die symposium oor Rehabilitasie op die Suid-Afrikaanse Mediese Kongres wat onlangs op Port Elizabeth gehou is. Die feit dat hierdie onderwerp op albei die voltallige sittings van die Kongres bespreek was, dui ook aan hoe belangrik die geneeskundiges die vraagstuk ag.

'n Kenmerkende eienskap van baie van die spesiale rehabilitasie-maatreëls wat aangewend word is die samewerking wat hul tussen geneeshere, hulpgeneeskundiges en ander, soos byvoorbeeld werkgewers, verg. Rehabilitasie besit egter 'n suiwer geneeskundige aspek. Elke geval moet deur die geneesheer behandel word, nie

EDITORIAL

REHABILITATION

This number of the *Journal* is devoted principally to rehabilitation—a subject which has been very prominent in medical and social literature in recent years. Various definitions of rehabilitation have been put forward; one which emphasizes the after-care aspect is 'the restoration of the handicapped to the fullest physical, mental, social, vocational and economic usefulness of which they are capable'. The need for rehabilitation, however, runs through all branches of medicine. Clearly the object of treatment is to restore the patient to normal, whether the deviation from normal is caused by disease or injury. Frequently, as in many acute cases, the patient when cured, whether by *vis medicatrix naturae* or by therapeutics, is able to resume his place in the world unimpaired; but in other cases, especially those called 'chronic', the patient when discharged by his doctor is not restored to normal, perhaps in body, perhaps in mind, and remains handicapped in his vocational, economic or social life. It is the existence of unfortunates in this category that emphasizes the need for rehabilitation.

In recent times the problem of rehabilitation has been conspicuously before the public in connection with certain special classes of case, such as cripples, paralytics, the blind, deaf and dumb, mental defectives, chronic consumptives and the aged. Various organizations, usually under medical guidance, have instituted rehabilitation schemes for persons with these different handicaps. The problem was brought into further prominence by the rehabilitative measures undertaken to assist ex-service-men handicapped by injuries received during World War 2.

Great material loss is sustained by those who are prevented from pursuing their callings on account of handicaps resulting from disease or injury. The losses extend to their employers, and seriously affect the economics of the country as a whole. The interest which organized industry and commerce is taking in the question is indicated by the presence of their representatives at the symposium on Rehabilitation at the South African Medical Congress recently held at Port Elizabeth. The fact that both plenary sessions of the Congress were devoted to the subject is an indication also of the importance that the medical profession attaches to it.

A conspicuous feature of many of the special measures that are taken for the rehabilitation of patients is the co-operation which they involve between doctors, medical auxiliaries and other agencies, such as employers. There is, however, a purely medical aspect of rehabilitation.

net met die doel om die betrokke patologiese prosesse die hoof te bied nie maar ook om die pasiënt se volkome geestelike en liggaamlike herstel te volbring. In hierdie opsig is rehabilitasie die praktyk van geneeskunde vanuit 'n besondere gesigspunt benader en moet dit nie as iets afgesonderd van of addisioneel tot die pasiënt se siekte beskou word nie. Dit kan wees dat dit na die pasiënt se 'herstel' (in die enger betekenis van die woord) vir die geneesheer nodig mag wees om 'n wakende oog oor die geval te hou om indien moontlik te verseker dat die pasiënt geskik is om sy daaglikse lewe te hervat; in elke geval moet die geneesheer tydens die siekte gedurig hierdie aspek in die gedagte hou. Voorbeelde is by die simposium aangehaal van gevalle wie se uiteindelijke volkome herstel meer regstreeks aan die behandeling in die hospitaal te danke was as aan enige hulp wat na sy ontslag aan hom verleen kon word.

Alhoewel weldeurdragte en behendig toegepaste behandeling tydens die akute stadium die behoefte aan rehabilitasie-maatreëls daarna tot 'n minimum mag beperk, is die probleem van die afwykende groot—en die geleentheid net so groot. Die besluite wat op die Kongres oor hierdie onderwerp geneem is (sien bladsy 704 van hierdie uitgawe) sal die algemene goedkeuring van die mediese beroep wegdra.

Every case should be viewed by the medical practitioner not merely from the point of view of combating the pathological process involved but also of restoring the patient to complete physical and mental health. In this sense rehabilitation is medical practice viewed from a particular angle, and is not to be regarded as something separate from or additional to the treatment of the patient's illness.

It may be that after 'recovery' in the narrow sense, it still remains for the doctor to watch over the case in order, if possible, to restore the patient to fitness for his daily life; but in every case this aspect should be before the doctor throughout the illness. In the symposium examples were quoted of cases whose eventual full restoration depended more directly on the treatment given in hospital than on anything that could be done for him after discharge.

Nevertheless, although well-considered and ably-applied treatment during the acute stage may minimize the need for subsequent rehabilitative measures, a great problem—and as great an opportunity—is presented by those suffering handicaps as the result of disease or injury; and the resolutions taken on the subject by Congress (see page 704 of this issue) will meet with the general approval of the medical profession.

SOME INDUSTRIAL ASPECTS OF REHABILITATION OF THE HANDICAPPED*

E. R. SAVAGE

President of the South African Chamber of Industries

In my personal capacity, and on behalf of the South African Federated Chamber of Industries, of which I am President, I wish to express my thanks and appreciation for the invitation to address your Congress.

Industry is directly concerned with the problem of rehabilitation and its solution, both as the major contributor to our national income and as the most important employer of labour. In the year 1952-53 manufacturing industry contributed £346,000,000, or 27.8% to the Union's national income, and it is estimated to have employed three-quarters of a million people, of whom a quarter of a million were Europeans and half a million non-Europeans. Industry is, therefore, vitally interested in any measure which could lead to increased national production by the most effective utilization of all labour resources. In view of the present general shortage of labour it is important that the man-hours lost through sickness, injury or other causes should be reduced to a minimum.

I take it that it is the recognition of this which has led to the inclusion of an industrialist in your list of speakers, and that what you primarily want to know from me is how industry views this problem, what contribution it is making to its solution and in what ways this could be improved upon.

Although the Federated Chamber of Industries and its constituent organizations have given attention to this question, no comprehensive policy has been formulated, and the views I express should be regarded entirely as my own.

Definition. To my mind it is necessary to have some definition of the term 'rehabilitation'. It appears from an examination of writings on this subject that there are various aspects included in the term, depending on the angle from which it is viewed. From the medical angle I have seen the problem defined as the treatment of sick and injured with the view of restoring them to health and employment to the fullest possible extent, this rehabilitation commencing on the first day of accident or injury when the patient comes under medical care, and ending gradually as the patient's dependence on medical care is reduced. When the question is looked at from the industrial angle it becomes difficult to draw a distinction between handicaps which are the result of physical and mental conditions necessitating medical treatment, and those which are due to other causes. Similarly it is not easy to differentiate between employment of which the object is 'rehabilitation', and normal industrial employment. The reason for this is that the significance of handicaps or disabilities depends very largely on the standard by which they are measured. Like talents and abilities, handicaps or disabilities are present in all human beings in widely varying degrees, and in the long run it is the relationship between the capacities of the

* A paper read in a symposium on Rehabilitation held in plenary session at the South African Medical Congress, Port Elizabeth, June 1954.

worker and the requirements of the job which determines whether the incumbent suffers from a handicap.

SUITABILITY FOR EMPLOYMENT

Naturally the aggregate of all talents and capabilities, with conversely the absence of handicaps or disabilities, is a measure of total possible achievement. It does not, however, necessarily have a bearing on the potentiality of economic employment in industry. Outstanding mental ability may even be a handicap in the performance of a particular task. Most of us gathered here will, for example, almost certainly be entirely unfit to perform most of those repetitive machine-operations that are an integral part of modern mass-production, which require considerable immunity to boredom from monotony. The average non-European, on the other hand, has been found eminently suitable for operative work of a repetitive nature.

A handicap in one direction may well be an advantage in another. A certain company in the United States of America, when troubled with high labour turnover in the performance of a particular operation, applied the experiment of employing deaf-mutes, with outstanding success. In a more general way, it has been a common experience that employees whose total possible fitness is impaired in one way or another, including the older employees, are inclined to be more conscientious, more regular in attendance and less given to changing their occupations. History abounds with examples where the loss of one or more faculties or limbs has been the direct cause of outstanding performance in a different direction. Henry Ford held the view that no worker was really disabled as long as he was willing to work and was placed in a suitable job. Personally I think this is an oversimplification of the problem and requires some qualification.

It seems then that from the industrial point of view the main criterion which distinguishes rehabilitation from normal employment is not so much the degree of disability in relation to possible normal all-round performance, as the extent to which employment cannot be effected without special dispensation.

Furthermore, in dealing with the industrial aspect of this question, it is necessary to recognize that disability which necessitates rehabilitation can be caused not only by sickness and accident but also by economic circumstances. A need for rehabilitation follows unemployment resulting from various causes, including the decline of particular industries or occupations. The steps necessary to refit the persons thus affected for employment in other spheres in many respects resemble those required for rehabilitation of the victims of serious diseases or accidents. The main factors causing disability are a break in employment, re-employment at an advanced age, and enforced change of occupation.

The proportion of persons who cannot be placed in employment through the normal labour market owing to some or other disability, to the total for whom employment is provided, varies at different times and according to different circumstances. In times of war, of economic upheaval and of rapid technological change, the numbers of handicapped people naturally increase.

Long-term trends also affect the position. The achievements of medical science are, for example, the cause why many people who would previously not have survived serious accident or illness are now saved, but subsequently come into the category of disabled or handicapped people. *Per contra*, advances in medical science, as well as the bringing of improved health services to the worker, have in many cases had the opposite effect by reducing absenteeism, the incidence of chronic illnesses and the numbers requiring rehabilitation. There is no doubt, for instance, but that the recent technical and medical progress in the diagnosing and treatment of tuberculosis, allied to the energetic co-operation between the medical profession and industry, has brought about a remarkable improvement. Tuberculosics now in a very large percentage of cases are diagnosed early, are treated early and are cured early, with a resultant tremendous saving in life, in the numbers requiring rehabilitation and in productive man-hours.

May I digress here to say that I cannot stress sufficiently the importance of developing such services to combat not only tuberculosis but all the other scourges to which we are subject, as the numbers requiring rehabilitation will, in my opinion, be largely determined by the degree of development of preventive and curative services. To some extent also such numbers could be reduced by increased attention to the education of the public regarding accident prevention and health preservation.

Coinciding with the long-term effect of the various achievements in medical science, structural changes have taken place within industry which have tended to increase the field of employment of handicapped people. Although it is not possible to obtain a reliable statistical estimate of the present position, there is no doubt that the percentage of those handicapped persons who are not absorbed in employment is small and is confined mainly to those with a negligible residual capacity for worth-while employment.

It is recognized that the problem needs serious attention, in the first place to deal with those handicapped people who reach the employment age and, secondly to cater for those unfortunate adults who enter the category of disablement.

Obviously the aim should be to place the maximum number of disabled or handicapped persons in gainful employment according to their residual capacities. The alternative to this would be their becoming a burden to themselves, to the State and to the community.

The cost to the State and to the community of idleness due to disablement is incurred by numerous departments and institutions. In South Africa this includes the *Department of Labour*, which is responsible for subsidizing the employment of semi-fit persons, and under whose jurisdiction fall the Unemployment Insurance Fund, the Workmen's Compensation Fund, including the recently established Rehabilitation Company, and the subsidized Sheltered Employment projects; the *Department Administering Pensions*, including pensions to disabled war veterans and blind persons, disability grants, etc.; the *National Council for the Blind*; the *National Council for the Deaf*; and various institutions concerned with the care of cripples etc.

The total cost of these and other institutions for the maintenance of disabled persons runs into millions of pounds per annum. Obviously, it would be to the advantage of all if that burden could be reduced by productive employment.

SHELTERED EMPLOYMENT

Probably the most comprehensive single project which aims in this direction is the Sheltered Employment scheme, which was originally commenced under the aegis of the Department of Social Welfare during the last war in order to cater for disabled ex-servicemen primarily, but which was subsequently extended to include a number of disabled civilian persons. These sheltered employment workshops, which were recently transferred to the control of the Department of Labour, employ up to a maximum of 1,800 persons. Goods to the value of nearly £750,000 are produced annually. The value of plant and machinery installed amounts to £120,000. The present Government subsidy comes to £400,000 per annum. Industry fully appreciates the value of this work. The Federated Chamber of Industries served on the committee which recommended its institution and is still represented on the Board.

Unfortunately the extension of these projects offers certain difficulties. From time to time the Federated Chamber of Industries has received complaints that the competition from these factories was seriously affecting private concerns operating in the same field. To overcome this difficulty, sheltered employment factories have confined their production to the manufacture of Government requirements. Even in this field, however, there are existing factories; some of them have been specially set up and equipped to cater for Government business. The Federated Chamber of Industries has under way an investigation into this facet in an attempt to find ways to overcome the competitive factor. It would be a great pity indeed if competition with private enterprise were to limit the scope of the valuable work which these institutions are doing and can do in connexion with rehabilitation.

A suggestion which commends itself as offering considerable promise is that the emphasis should be placed on rehabilitative training rather than employment. Production from these factories would then be of secondary importance to the training and rehabilitation value which they would have. Instead of providing permanent or semi-permanent employment, as is the case today, they should form the training ground from where the persons concerned could be placed in ordinary employment by selective methods.[†] It is understood that a start has already been made in this direction. If such a policy was generally adopted, employment of disabled persons, subsequent to their receiving such medical treatment as is necessary, could take place on a much larger scale as part of a general programme of vocational training followed by selective employment in industry.

In many countries, including the United States of

[†] Chapman, D.: *Economic Aspects of Urban Sheltered Employment in the Union of S. Afr.* Unpublished thesis.

America, the emphasis is steadily shifting from subsidized idleness and subsidized sheltered or ordinary employment to scientific vocational training and subsequent selective placement.

A COMPREHENSIVE PROGRAMME

A comprehensive programme to deal with persons not readily employable in industry under normal circumstances requires close and active co-operation between all concerned; namely the medical profession, social scientists, private, philanthropic and Government bodies, and employers of labour. I visualize the following broad stages in such a programme: firstly, medical treatment in all its various phases; secondly, training and preparation, and thirdly, placement in employment.

Some of these stages will of course overlap. Also, not all handicapped persons need to go through all three stages. Some will, for example, not require medical treatment; others again can enter or return to employment after medical treatment without further training and preparation.

The first stage naturally is the sphere of the medical profession. The second stage falls under the control mainly of private and Government organizations, sheltered employment projects, etc. It is the third stage which affects employers of labour, including industry, and it is that with which I mainly want to deal.

Concerning the potential employment in manufacturing industry of persons handicapped in one way or another, recent trends in the structure of industry have considerably increased the possibility of employing persons with varying incapacities, provided they are placed scientifically and selectively. I am referring here to the process of mechanization and specialization as a result of which the demand on individual workers has been narrowed and the range of physical and mental attributes necessary to do a particular job has been correspondingly reduced.

Let me illustrate this by means of an example: Whereas in the olden days the master craftsman himself planned his work, frequently drew his own plans, fetched his material, sharpened his tools, performed a number of operations by hand and inspected his finished product, today in a modern mechanized mass-production factory the individual operator may have no more to do than switch on his machine and press a button. The planning, inspection, tool conditioning and other auxiliary services are separate and distinct parts of the process and are done each by a different worker; the material is brought to the worker by conveyor belt, and the finished product taken away. Whereas the master craftsman required the use of his hands, his feet, his eyes and a considerable degree of intelligence, the operator in the example quoted could do the job with one hand and just normal vision.

MODERN DEVELOPMENTS

The task of fitting the worker to the job has become a specialized function which under scientific management is performed by a separate personnel department. It involves on the one hand the subdivision and classification of various jobs and operations and the analysis of the physical and mental characteristics necessary to

perform them; for example, physical strength, endurance, dexterity, etc., and on the other hand the determination, through the medium of medical examination and aptitude and trade tests, of the workers' abilities. By these means many people previously considered unsuitable are today placed in productive employment.

It appears that this process could be taken still further by the conscious examination and classification of jobs and operations which could be performed by people with specified forms and degrees of disability. This would require the closest collaboration between personnel departments, the medical profession and the Department of Labour. It has frequently been found that handicapped persons could be enabled to perform machine operations by comparatively slight adjustments to operating levers. The medical profession could assist by conducting medical examinations and framing medical certificates in such a way that an indication is given of the type of work which patients would be capable of performing.

As far as the employers are concerned, there still exists considerable inertia against the employment of handicapped people, especially those of more advanced age. This is a relic from the days when over-all fitness was considered an essential condition for employment. But the position is rapidly changing. A recent survey in the United States revealed the extent to which employers are consciously engaging handicapped persons with satisfactory results. The following quotations taken from the replies received are appropriate. 'We are fully alert to the contributions which physically handicapped and older workers can make to the productive effort of our company and the nation and we are endeavouring to translate this belief into action whenever the opportunity arises.' And again: 'One outstanding thing we have noticed in employing physically-handicapped or older workers is that these individuals are extremely appreciative of the opportunity given them. They have a greater desire to please, and labour turnover among these workers is lower than among other workers.'

In South Africa similar efforts and experience could be found both in individual factories and on the part of organized industry. In many factories the policy is followed of re-employing, wherever possible, those workers who after satisfactory service have become disabled in one way or another. Others again have taken

special measures to employ young or old people who suffer from some disability.

The Natal Chamber of Industries has recently taken considerable interest in finding means of placing tuberculous who have been certified as cured. A survey was conducted and, with the assistance of individual employers, a comprehensive list of jobs in 20 different types of industry in which these persons could be economically employed, was compiled. The Chamber has recorded the reaction of industrialists in the following terms: 'It was gratifying to note that most firms, except those engaged in food handling, were prepared to re-engage employees once they had been certified non-infectious'. Also, 'Firms who adopt this procedure encourage the employee to effect a speedy cure by relieving him of considerable mental anxiety and also remove from Public Welfare institutions the expense of rehabilitation.' Payment from medical benefit and sick benefit funds, incidentally, have a similar effect.

Many of the obstacles encountered in the employment of disabled people, however, fall outside the sphere of employers or employer organizations; for example, employment of persons who have not passed through regular apprenticeship. In addition, the terms on which Government grants and pensions are paid, and on which persons are employed in sheltered employment factories, do not encourage graduation to normal employment.

Thirdly there appears to be a lack of co-ordinated effort on the part of the State to fit handicapped persons for employment by vocational training and to place them by means of selective methods in co-operation with employers. It seems necessary in this connexion that there should be a classification of handicapped persons in accordance with the type of employment for which they could be fitted; that where necessary they could be given training in that direction, and that close contact should be maintained with personnel departments of employers.

It is held in some quarters that the adequate solution of this question will require the institution of some over-all co-ordinating authority. While I would at this stage prefer not to express a definite view in this regard, I can state that individual employers, as well as the Federated Chamber of Industries and its constituent bodies, could be relied upon to play their part in recognizing the fact that the purpose of all rehabilitation must be employment in the normal labour market.

REHABILITATION

SUMMARY OF ADDRESS*

W. G. PATERSON

Past-President of the Association of Chambers of Commerce of South Africa

My Association is not an employers' organization in the ordinary sense of the term, in that it does not normally concern itself with relationships between

employers and employees, individually or collectively, although individual members of the Association in their capacity as employers, do naturally take a broad and practical interest in employer/employee relationships. It is indeed gratifying to note the developments that have taken place in that direction in all firms of good repute.

* Given in a symposium on Rehabilitation held in plenary session at the South African Medical Congress, Port Elizabeth, June 1954.

But although its main functions lie in the economic sphere my Association recognizes that the efficiency and the contentment of the human element is all-important, and how important it is that the general health of employees should be improved, not only for the individual concerned but also for the general well-being of the country as well.

The competition that prevails in the Distributive Trades is an assurance that the costs of distributing merchandise is kept as low as possible. There are, however, certain limiting factors which prevent the reduction of distribution costs beyond a certain point. One of these factors is the loss of efficiency caused by the absence of employees from work as a result of sickness or accident.

According to the 1947 census of distribution, total retail sales in the year 1946 amounted to £442 million. (These figures refer to retailers only; if the whole of Commerce and Industry were combined, they would be very much greater.) The salaries and wages paid to the employees engaged in distributing this quantity of goods amounted to £32 million, and the experience of a large number of commercial firms is that the average proportion of employees absent from incapacitation at any one time is between 4% and 5%. Assuming that the figure is 4%, £1.3 million was paid out in wages for no corresponding return in work. Could that amount of money be saved, then either selling prices of goods could be reduced or higher wages paid, both of which would improve the economic well-being of the nation as a whole.

Commerce is seriously concerned about the waste that is incurred through incapacitation of employees. From the Commerce angle, there is a tie-up between rehabilitation and absenteeism. If your Association today decides to take some practical steps to assist in rehabilitating those who are of economic value to the country, you will be doing a very fine job of work indeed, and Commerce generally, and my Association in particular, will be only too delighted to co-operate with you in any way possible consistent with their constitution.

All business men get faced with very distressing problems from time to time. We have had employees who have worked for us faithfully for a great number of years—employees who have amassed a fund of experience and knowledge which cannot be easily replaced. Suddenly such an individual is stricken with an illness, or he has family troubles which affect his usefulness. I never have felt, and never will feel, that that man should become a wasted asset. I firmly believe that if the proper steps are taken on proper advice, it should not be difficult with patience to see him reinstated with full pride in himself and with full usefulness to the community. I cannot see, however, how this can be brought about unless we can get full co-operation between the individual himself, his doctor and his employer. I am fully aware that the medical man must be extremely discreet and that under no circumstances could he be expected to divulge anything told him in confidence by his patient. Neverthe-

less, I feel that there is room for a greater measure of confidence between the three parties concerned, and that if the medical man were to put the problem to his patient and advise him that a clear, clean statement of his position should be discussed with his employer, nothing but good for the individual concerned would come about.

The average layman takes as gospel what his doctor tells him, and therefore I feel that the medical man could quite easily extend himself a little more than perhaps some do, in trying to bring about a closer relationship between the indisposed employee and his employer. As long as legislation continues to govern the terms of employment, you will find that certain employees will act according to the letter of the law, and if they are entitled to 12 days paid sick-leave per annum they will see to it that they get it. I feel the doctor can help combat this unsatisfactory state of affairs by perhaps giving a little more consideration than some do to the economic implications of unjustified absenteeism. A qualified certificate, authorizing part-time or light work, might help. But it would be a far better proposition if there could be a much closer liaison in matters of this nature between employer and employee.

People who have suffered major calamities are fortunately in the minority, but, to my mind, rehabilitation goes a lot further than just these few unfortunates, and embraces the many individuals who may not be physically or mentally ill, but who find themselves for some reason or another to be misfits in the functions in which they are occupied. Employers can help these people if they are keen, and in many cases they do so, but I firmly believe that no such individual can be helped unless he helps himself and knows how to do it; and it may be here that the medical fraternity might be able to teach them how. An organization such as you envisage, to assist the less fortunate, might consider this aspect and publish information which might be circulated to the managements of those concerns which are really interested in the well-being of their employees. I am quite sure that you would get a great deal of support from the commercial fraternity in such a direction.

I feel sure that Commerce would support any organization which you might set up to assist in this important question of rehabilitation. We should have no objection to its being government-sponsored, but I believe we would much prefer that, although it may be government-sponsored, the organization should not be government-controlled. We believe firmly in free enterprise and we feel that the individual who has to help himself becomes a better citizen than if everything is done for him by a benevolent state.

In conclusion I would once more thank you for the opportunity you have given my Association of voicing a few thoughts at your Congress, and hope that should you pass a resolution on this subject of rehabilitation, you will be kind enough to forward a copy, together with a brief synopsis of your discussions, to my Association for consideration.

PHYSICAL MEDICINE IN REHABILITATION: ITS SCOPES AND PROBLEMS *

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In a review of the first half of the 20th century, Lord Horder, in his Harben lectures,¹ singled out two developments which impressed him as being the most noteworthy in the field of medicine. One of these was physical medicine, which he described as being 'one of the most important developments in medicine in my time.' This opinion of a physician of the eminence of Lord Horder will give encouragement to many, and, perhaps more important, will cause others, not so favourably impressed, to pause and reflect.

At this Medical Congress Rehabilitation has been chosen as the subject for discussion on both days allocated for the plenary sessions, while other papers read at the sectional meetings will deal with the same theme. This Congress is in fact a Congress of Rehabilitation, and no branch of medicine is so concerned with rehabilitation as is physical medicine. So much so is this the case that the two terms, physical medicine and rehabilitation, are often found joined together and each has acquired a meaning complementary to the other. It can be said that physical medicine concerns itself largely with rehabilitation, while rehabilitation is often achieved by means of physical medicine.

In this paper, firstly the scope of physical medicine in the restoration of the sick and injured will be briefly reviewed, and secondly the problems and difficulties encountered in its application will be detailed and discussed.

Definition. Originally the term 'rehabilitation' was restricted to the restoration carried out during that period formerly known as convalescence, when the physician or surgeon had finished his main treatment, but the patient had not yet recovered sufficiently to resume his former work or continue with his previous mode of life.

The meaning of the term was gradually extended to include all medical and surgical treatment, as well as measures used during convalescence, but was still restricted to connote restoration of the individual in the medical sense only.

Obviously, that is not always enough. To achieve full rehabilitation, a person must also be integrated into the community both socially and economically. He must not only be well, but he must be working at some occupation which will contribute wholly or partially to his livelihood, and he must take his place on a par with other members of his group. And so today the term 'rehabilitation' has come to be used in this wider sense, and may thus be defined as that process whereby an individual who has been incapacitated as a result of injury or disease is restored to his former state (or, where that is not feasible, to as near that state as possible).

* A paper read in a symposium on Rehabilitation held in plenary session at the South African Medical Congress, Port Elizabeth, June 1954.

both from the medical point of view and the social and economic aspects.

Medical restoration is not the sole aim. For full rehabilitation, provision may have to be made for re-employment (which at times may require the re-training of an individual in another vocation), for housing, even transport and other matters, which constitute daily life.

The medical practitioner cannot any longer evade any of these responsibilities. His task does not end with the medical restoration of the patient. Only when the latter has been completely integrated into the community, both economically and socially, does his responsibility end.

THE SCOPE OF PHYSICAL MEDICINE IN REHABILITATION

In Prophylaxis

From the wide range of rehabilitation as thus defined it follows that the scope of physical medicine, when helping to achieve such restoration, must also be wide. Physical treatment today begins early in disease and injury, by the introduction of measures such as active, assisted or passive movements to prevent contractures, muscle wasting, or the effects of venous stasis. Sometimes indeed this form of treatment is used prophylactically, as for instance, before a projected operation, in order to ward off unwanted sequelae. This happens before operations on the lungs or the heart, when the patient is instructed in breathing exercises, corrective postural training and exercises for the extremities, with the object of continuing these as soon after the operation as possible so as to avoid deformity, contractures and hypostatic congestion of the lungs.

Prophylaxis is carried even further today in geriatrics, by the use of occupational therapy. Instead of permitting a patient to reach retiring age unprepared, he is encouraged to take up some occupation or develop a craft, which will prevent his mental and physical deterioration when his normal employment ceases at the age of retirement.

In Every-day Practice

Along with the 3 other main divisions in the medical field, namely medicine, surgery and psychiatry, physical medicine plays its part in the restoration of patients suffering from injury or disease. By the application of the various forms of heat, massage, electricity, light, exercises, hydrotherapy, cryotherapy, manipulation and occupational therapy it assists in the process of healing, the alleviation of suffering and the restoration of function. It plays this part in fractures and dislocations, injuries and diseases of joints, affections of muscles, tendons and ligaments, injuries and diseases involving the central, peripheral and autonomic nervous systems, peripheral circulatory diseases and many other conditions. Indeed,

there is hardly a branch of medicine in which physical medicine does not have a role to play.

In Special Conditions

But, while its use in the many above-mentioned conditions is important, physical medicine plays a dominant and often an indispensable part in certain other injuries and diseases, of which the following are the more noteworthy:

Cerebral Palsy.² Physical medicine has an important place in the treatment of nearly every child afflicted with this disease. The methods used include exercises, relaxation, massage, passive stretching, re-education, occupational and play therapy and often hydrotherapy. By a carefully-planned programme, it is possible to rehabilitate a proportion of these patients, either partially or fully.

Injuries and Affections of the Spine.³ Since the last war a big change has come over the approach to these cases. No longer are patients allowed to lie in hospitals and waste away from emaciation following on septic absorption from infected bed-sores and septic bladders. An active programme of rehabilitation will restore most of them to activity and to useful work, and the physical means employed for this purpose form an essential part in such a programme. The underlying basic principles of these measures is activity and the mobilization of all compensatory faculties left undamaged. Thus, in order to safeguard the skin and avoid bed-sores, the position of the patient is changed completely every 1-2 hours night and day, and pressure on weight-bearing points thus re-distributed. Passive movement of all the joints of the paralyzed limbs are started early to avoid contractures, to prevent stiffness and to maintain a better circulation, and are carried out once or twice each day without fail. A programme of compensatory training, to strengthen and even overdevelop the remaining uninjured muscles, which will compensate for those lost as a result of the injury, is another important part of the treatment. This consists of graduated exercises applied to the upper extremities and trunk, the purpose of which is to strengthen these so that they may take over, and thus compensate for, some of the functions lost as a result of the paralysis of the lower extremities.

Finally, a programme of re-education is embarked upon. This includes training of the bowel and bladder, exercises in dressing and undressing, getting out of bed into a wheel-chair and *vice versa*, rising to the upright position from a lying position on the floor, walking and balancing, ascending and descending stairs and the many other tasks that go to make up daily living.

Throughout this period, while all the activities described above are going on, there is added a programme of occupational therapy. This is designed firstly as a diversional measure, to stimulate the patient and take his mind off his predicament, but is soon replaced by work with a kinetic purpose, the object of which is to assist in the compensatory training. And lastly, when necessary, the occupational therapy gives place to pre-vocational training, preparatory to equipping the individual for re-employment in some industry.

The above is an outline of the physical measures

employed in the rehabilitation of spinal injury cases. Other measures, such as urological, orthopaedic, surgical and even medical, will often be necessary, but an active physical programme will often obviate complications such as those of the bladder and bowel, bed-sores, and others requiring prolonged and tedious surgical, urological and orthopaedic intervention.

Geriatrics. In recent years the problem of the aged has gradually become more prominent. Dr. William Ziv⁴ tells us that the span of life of the average man is now 70 and of the average woman 75, and he envisages that in the foreseeable future it will be extended still more. In the U.S.A. in 1952 there were 12 million people over the age of 65,⁵ i.e. approximately 8% of the population. As the aged are particularly prone to suffer from physical disabilities of all sorts, this group is often especially in need of rehabilitation, and a heavy demand is made on physical medicine to meet this requirement. For in the restoration of the aged, no less than in other groups, physiotherapy and occupational therapy play a leading role. Geriatrics is still in its infancy, and with its growth the facilities in physical medicine will have to be much expanded.

Poliomyelitis. This disease has increased in recent years. The extension has taken place in two directions—(1) geographical, (2) in the age-groups affected. For a long time polio was rarely met with in South Africa, but it is vastly different today. During the past decade, the country has gone through several serious epidemics, and at present hardly a summer passes without its crop of polio casualties. As regards age incidence, polio is no longer a disease confined to infants. Many other age-groups are affected and even individuals past their prime often contract it.

The ravages of this disease and the part played by physical treatment are well known, and here it is sufficient to say that physical measures form the sheet anchor in the rehabilitation of the polio patient.

Obstetrics. The introduction of physical measures in the preparation of the expectant mother for childbirth, and in her rehabilitation (as well as that of her infant) following this event, has had a profound effect on midwifery. Today, the physiotherapist accompanies the patient into the labour ward, and when the actual confinement is over continues to administer post-natal physiotherapy until full restoration is achieved.

The introduction of infant gymnastics affords a rational approach to the rehabilitation of the premature baby and of the child suffering from malnutrition, rickets, deformities and many other conditions.

THE PROBLEMS OF PHYSICAL MEDICINE IN REHABILITATION

Rehabilitation by physical means is essentially a practical procedure and requires for its successful achievement a fully-trained and competent staff, consisting of both medical and technical personnel. In this country, both these categories are woefully short; so much so, that rehabilitation is often impossible for that reason.

South Africa is as yet poorly endowed with plans or facilities to cope with the situation. Briefly, the position is as follows:

Undergraduate Training in Physical Medicine. Apart from a short course of half a dozen lectures at the Johannesburg Medical School, no instruction in physical medicine is given to undergraduates in any of our 3 medical schools. This is the case in most medical schools all over the world—a surprising phenomenon in view of the fact that fully 20% of all patients passing through general hospitals receive physical treatment. As a result, most medical practitioners go into practice with but a poor appreciation of the scope and value of physical treatment, and rehabilitation is thus slowed down at its inception.

Graduate Training in Physical Medicine. The pivot around which rehabilitation by physical methods centres is the specialist in physical medicine. It is his function to plan, carry out and supervise programmes of treatment designed to restore the sick and the injured. There are in South Africa 18 such specialists, of whom 16 are in active practice. This number is sufficient only to staff but a fraction of the hospitals and other institutions in the country. In order to improve the situation, posts for housemen, registrars and assistants should be introduced to draw younger men into this branch of medicine. In addition some assistance should be afforded to prospective candidates in the form of bursaries, grants, etc.; the Baruch Foundation⁶ does this in America for physical medicine in all its aspects. Some similar impetus would be very helpful here in this country.

The Medical Auxiliary in Physical Medicine. Besides the doctor trained in physical medicine, a veritable battery of technical assistants is indispensable if rehabilitation is to proceed smoothly and efficiently—the physiotherapist, the occupational therapist, the remedial gymnast—and more recently there has been added the vocational guidance or training officer. All these auxiliaries are in exceedingly short supply. In the Transvaal Provincial Hospitals alone, 30 posts for physiotherapists cannot be filled, in spite of the fact that there are 2 physiotherapy schools in the Province and there have been recruiting campaigns overseas. The numbers of occupational therapists and remedial gymnasts are smaller still. In 1952 there were only 4 occupational therapists registered with the South African Medical Council. As rehabilitation cannot proceed without these medical auxiliaries, energetic measures will have to be put in hand to recruit and train them; steps towards this end were recently taken in the Transvaal by the Director of Hospitals in conjunction with the Directress of Nursing. In Pretoria a school is being established for the training of physiotherapy teachers; the first course is due to start early in 1955.

Space and Equipment. Besides the necessary staff, adequate physical-medicine departments are also essential, consisting of sections for physiotherapy, occupational therapy and hydrotherapy, with well-equipped gymnasia. Usually, while the physiotherapy portion is well developed, the other three are either in a rudimentary state or not provided at all. This retards rehabilitation a good deal, particularly the absence of a good occupational therapy section. With the increase of poliomyelitis hydrotherapy has assumed a new significance; yet on the whole of the Witwatersrand there

is not one hydrogymnasium equipped with a suitable heating mechanism so that it can be used the whole year round—in winter and summer alike.

Sheltered Workshop. This is another provision which becomes essential in the rehabilitation of the more severely disabled. Because of their handicap these individuals are unable to compete on the open labour market, and in consequence employment in a sheltered workshop has to be provided for them. Often the prospective employee has to undergo first a course of vocational training before taking up his new work.

Such sheltered workshops are costly undertakings to establish and are difficult to run on a paying or even partially-paying basis. A number are operating successfully in this country, some being Government sponsored and others supported by private organizations and individuals. They are indispensable for the rehabilitation of some of the more difficult or more severely handicapped persons, and their number will probably have to be augmented in the not distant future. For no individual can be said to be fully rehabilitated unless he contributes either in part or in whole, by his own labour, to the upkeep of himself and his dependents.

Delaying Factors in Rehabilitation. There are a number of requirements which, if provided, would speed up rehabilitation greatly:

(1) The necessity for instituting treatment early. This would help to avoid stiffness of joints, wasting of muscles, contractures, etc. It should be axiomatic that physical treatment must be introduced as soon as possible, preferably at the same time as other medical and surgical measures.

(2) The intensive use of kinetic occupational therapy, i.e. work designed for remedial purposes to improve a specific disability. Whereas most physical treatments can be applied with benefit for a limited time only—usually $\frac{1}{2}$ -1 hour at a time—occupational therapy can go on much longer, being purposeful and creative and exerting its beneficial effects during the whole time of its application.

(3) The change of emphasis from compensation to rehabilitation in any injury covered by the Workmen's Compensation Act.⁷ At present the very name of the Act focuses attention on compensation. The keystone should be rehabilitation. Often, patients do not get well until the question of compensation has been first settled. It would be well to eliminate the word 'compensation' from the name of the Act altogether and substitute in its place the word 'rehabilitation'.

*Rehabilitation Centres.*⁸ In recent years, spurred on by convincing proof of the value of modern rehabilitation measures when applied to war casualties, centres confined solely to rehabilitation have emerged in both Britain and America. In these institutions the various services used in the restoration of the handicapped are concentrated in one place, and many obvious advantages accrue from this arrangement: (1) There is much saving of time, if only for the reason that treatment goes on all day on a full-time basis. (2) The provision of an integrated, rather than a piecemeal, service avoids overlapping. (3) The active and purposeful atmosphere deliberately created

and encouraged in such an institution acts as a powerful stimulus in achieving the desired results.

The development of similar centres in South Africa cannot be delayed. The need to conserve man-power in a young community in full cry after industrialization is likely to act as a powerful lever to forge the necessary co-operation between medicine and industry. The Government, too, cannot easily stand aloof from assisting and even partaking in such an important social undertaking. Indeed, legislation to facilitate the absorption of the disabled into industry is essential.

The provision of rehabilitation centres in this country is the next major step required in the restoration of the disabled; but it is difficult to prognosticate what form they will take and what their relationship to industries^{*} will be.

SUMMARY

The importance of physical medicine in the rehabilitation of the disabled is detailed and the scope of such restoration briefly described.

The problems encountered in carrying out this work is discussed, with a view to bringing them into prominence and in this way promoting their solution.

It is with pleasure that I acknowledge my indebtedness to Dr. E. B. Woolf, M.E.C. and Dr. Cyril Adler for helpful criticism and useful suggestions.

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PSYCHIATRIC ASPECTS OF REHABILITATION*

M. B. FELDMAN, M.B., CH.B.(RAND), D.P.M., R.C.P.&S.(ENG.), M.R.C.P.(EDIN.)

Johannesburg

In considering rehabilitation, particularly of those engaged in commerce and industry, from the psychiatric point of view, we find ourselves mainly concerned with two large groups of problems. The first is made up of those partly or wholly disabled by serious physical sickness or bodily injury (whether contracted on or off the job) whose illness resolves but whose disability persists; the second, of those without serious physical sickness or injury who are problem workers. By reason of inefficiency, frequent absenteeism (usually on the grounds of minor bodily ailments), personality awkwardness or alcoholism, these people are known to their employers as difficult persons, and to their family doctors and industrial doctors as hysterical or neurotic or as suffering from 'functional' or psychosomatic ailments. How can we understand and help or rehabilitate these two groups of workers, who although presenting in different ways can be appreciated as suffering from similar disabilities.

To understand them we must study them as persons. Each of their personalities is the product of the interaction of constitution (that constellation of inherited and pre-birth factors) and environment. As someone has well put it, 'Heredity deals the cards, environment plays the hand'. By the time a person starts work in commerce or industry, his personality, compounded of the interactions of constitution and environment, has become fairly well established.

His intelligence, skills, aptitudes and interests will

have played some part in determining his choice of work, but the pressures arising from his environment, particularly the need to earn, and the type of work available, will often determine his entry into work which may not suit him at all.

Stress at work may stem mainly from the uncongenial nature of the work itself—and here I must remind you that one man's work may be another man's poison—or from personality clashes arising between the worker and his fellow workers and management. The difficulties may be from personality defects or illness of the worker himself, of his fellow workers or the managerial staff. Difficulties at work may lead to repercussions in domestic and social relationships, i.e. outside the working environment; in fact, they may be manifest almost entirely away from the job. In the same way, difficulties arising from domestic or social maladjustment may be reflected in difficulties at work.

These difficulties require investigation and treatment in the interests of the worker himself and of the morale and efficiency of the working group.

The basis of sound investigation remains (1) a life history of the patient obtained from himself and checked by (2) information from his relatives, supplemented by a work history obtained from the patient, his fellow workers and his superiors (including his personnel officer if such exists), and finally (3) a physical examination. Supplementary investigations, including formal assessment of intelligence, personality, aptitudes and skill may be necessary before final analysis of the difficulty can be completed.

After a review of his life history and work history, a

* A paper read in a symposium on Rehabilitation held in plenary session at the South African Medical Congress, Port Elizabeth, June 1954.

decision is made whether further investigation is required and whether treatment is required; and, if so, whether this can be done on an out-patient basis or requires in-patient admission.

If the adjustment required does not demand deep-seated changes in the personality, the best man to handle the problem is either the patient's family doctor or his industrial medical officer. Therapeutic interviews can be arranged either during or after working hours. The late clinic (5—6.30 p.m.) is most acceptable to management and worker.

If admission is required to tide the patient over an acute difficulty and to remove him from the source of the tensions, admission should be under the patient's family practitioner or industrial medical officer in the first instance. If the patient fails to respond to the simple out-patient or in-patient measures discussed above, then psychiatric opinion is required. Treatment of specialized psychiatric nature, and sometimes at a special psychiatric clinic, may thereafter be required. The management must accept this treatment as entitling the worker to sick leave on sick pay just as for the somatic disorders, provided they can be given some assurance that treatment will not be too lengthy and that there is a good chance of returning the worker to a useful position within their organization within a reasonable time.

MILD FORM OF MELANCHOLIA

In this connection I should particularly like to draw attention to a not uncommon, temporarily disabling, form of illness occurring amongst middle-aged workers with good work-records. This is a mild form of melancholia, which often masquerades in the guise of a neurosis or psychosomatic ailment. For this reason it has been called pseudoneurotic melancholia. Dr. T. A. Munro's description of this condition in *Modern Practice in Psychological Medicine* cannot be bettered and I quote him:

'The mildest forms of this morbid state may be indistinguishable from ordinary human unhappiness and discouragement. Time goes on, however, without improvement. There may be no apparent causes for discouragement. The patient takes no pleasure in life, loses interest and joy, becomes less spontaneously sociable but more self-centred, lacks energy and dislikes effort and work. His family may tell him he is lazy and should pull himself together. He takes this criticism to heart and is easily moved to tears. His friends may try to take him out of himself in social noise and recreation or on a holiday. His inability to respond cheerfully to such activity increases his already growing feeling of personal inadequacy. After some months of a glum despondency and inactivity, in which both work and play are an effort, the whole condition clears up spontaneously and a happy activity is resumed. Mild depressive swings of this nature are usually observed by the physician only during the course of some intercurrent bodily illness.

'In many instances the depression deepens further. The depression of activity and the sense of effort increase to an amount such that the patient feels unable to cope; the housewife will neglect her tasks and the husband stay home from work. Typically there is difficulty in thinking, expressed as inability to concentrate, and the depression of spirits takes the form of sadness. There is often a marked daily variation in the severity of the depression. The patient is at his best in the evening, and at his worst in the early morning when he lies awake feeling unable to deal with the problems of the coming day. The sadness becomes a deep gloom. He realizes he has lost interest, lost the pleasure of life, lost the experience of joy, lost his driving energy, so that everything is an effort and work an impossibility, lost even his feelings which appear deadened so that he cannot feel love for his family or sorrow

in a friend's trouble. He bewails the past and dreads the future. It is not worth going on. He cannot go on: there is no use going on. Death appears a desirable peace, and thoughts of suicide come unbidden to his mind. He has a keen appreciation of the change that has come over him and sees no hope anywhere. In searching for an explanation he may fix on his bodily feelings of discomfort and become hypochondriacally preoccupied over them.

'Bodily symptoms are prominent. The patient has little difficulty in getting to sleep, but wakes early, at six, five or four o'clock in the morning, and cannot get off to sleep again. Appetite fails, vague indigestion and dyspepsia occur, and constipation may be severe. Loss of weight is usual, is sometimes rapid and is not explained by the failure of appetite. Menstruation becomes irregular or absent, sexual potency is less and in both sexes sexual desire is much decreased. The patient often comes to the physician complaining of some bodily symptom and keeps the more personal and emotional matters in the background. The present symptoms are frequently headache, blurred vision, loss of appetite, indigestion, constipation, fatigue, menstrual irregularities, backache, precordial pain, lassitude and sleeplessness. One or other of these symptoms, along with general ill health and loss of weight, quite strongly suggests the presence of organic disease. The examinations for a tuberculous focus or for a carcinoma of the colon are, fortunately, often negative. Findings such as a raised blood-pressure, a glycosuria or radiological evidence of delayed emptying of the stomach or signs of osteoarthritis of the spine, do not fully explain the symptomatology. A tentative diagnosis of organic disease may be made, or the condition considered to be 'largely functional', but the true nature of the disorder is often not appreciated. There are at least three reasons why depressive states of this kind are sometimes not recognized. First, because of a preoccupation with the problems of organic disease some physicians often do not make any systematic inquiry about a patient's behaviour and emotional state. Secondly, the physician may have some difficulty in appreciating the morbidity of emotional reactions when they are noted, because of lack of trained experience. Thirdly, almost the last symptom which the patient complains of is depression. Patients tend to stress their bodily complaints because they believe that their bodily symptoms are their illness, or because they think that a doctor is a person who deals with bodily disease and is not interested in emotional feelings. Moreover, people are shy of speaking of their feelings. Sometimes in depressive states the feelings are so grim that the patient dreads to mention them.

'After the bodily complaints have been investigated, if the patient is asked how he feels about life in general and in his spirits in particular, he will begin to talk of his real problems. The bodily complaints can then be seen to occupy a relatively minor part of the total clinical picture. Such findings as a dominating sadness, a loss of feeling, a loss of activity, difficulty in thinking, suicidal thoughts, early morning waking, and a morning-evening variation in severity make the diagnosis plain. If the physician can question the relatives he may obtain a keener appreciation of the great change in mood and in behaviour which has taken place.'

My excuse for quoting this is the frequency with which these middle-aged people with good work-records are sent along because they are unable to cope with their work, and the general practitioner will not be able to assist in rehabilitation of these people if he dismisses them as neurotic. Family and industrial practitioners must recognize this form of illness, which has as a rule an excellent prognosis. It is tragic to allow the patient to suffer on and on. In the first instance he not infrequently responds to simple measures such as removal from work, morning stimulants of the methedrine group and evening bromide (barbiturates are best avoided because of hangover which may increase the morning depression). If response to this simple regime is not forthcoming within a week or two, then the patient should be given the opportunity of electro-convulsive therapy, so-called 'shock treatment'. The use of pentothal (for induction of sleep before treatment) and scoline (short-acting muscular relaxant to remove muscular

convulsions) have taken the shock out of shock treatment.

These patients can be treated on these lines as out-patients; the absence of cardiac and musculo-skeletal complications of the treatment administered as above makes it possible for elderly frail patients and those with severe cardiac illness to have the treatment without danger. This technique has also made possible 'multiple' treatments which cut down the number of treatment sessions from the dozen to half the number. I should like to suggest the term 'electrosedation' for this type of 'aconvulsive therapy', to take the place of the obnoxious and misleading term 'shock treatment', so reminiscent of the worst era of psychiatric practice in the happily distant past.

TARA HOSPITAL

In Johannesburg we are fortunate in having Tara Hospital with approximately 140 beds, of which about 100 are available for the treatment of the neuroses and for rehabilitation of patients disabled by neurological disorders, including those left after neurosurgery. Its specialized departments include physiotherapy (in charge of a specialist in physical medicine), occupational therapy (directed by a skilled occupational therapist with psychiatric and neuro-orthopaedic training), physical education and relaxation (directed by a recreational officer). The industrial psychologist advises on aptitudes, and the social worker assists with job-placement as well as other aspects of environment. Bowling greens, tennis courts, a swimming bath, a mashie golf course, a croquet lawn and a sports field allow of a wide range of recreational activities. Entertainment also is organized by patients, who are given a great deal of responsibility in the arrangement of ward, dining-room and recreational activities. Group psychotherapy in addition to individual psychotherapy complements such physical therapies as may be required. Excellent collaboration exists between the Department of Labour, the employers and the social welfare workers at the hospital.

THE PARTIALLY DISABLED

A word or two on the subject of permanently partially-disabled workers: In Britain, employers in industry are compelled to make provision for the employment of a number of disabled workers in proportion to the size of their staff. In addition, the Remploy scheme provides for the re-training of disabled workers in trades which will allow them to work within the limits of their disability. They are paid three-quarters of the standard wage of the particular industry although their output of

work may only be one-third of what the average worker can accomplish. With proper management the financial loss can be reduced to a minimum. Although it is more expensive than social-welfare grants-in-aid would be, yet the self-respect of the worker is maintained and in some cases built up to the extent that he can once again enter the open industrial market in the new trade which he has learned.

In this country the Government has fostered sheltered employment schemes with similar aims in view, and voluntary groups, such as the Rand Epileptic Employment Association, have initiated schemes.

The worker disabled by age presents a similar problem. It should be possible in industry to find work for these people in less strenuous, but nevertheless highly skilled, work, the employer getting full value for the wages he gives his workers. In Britain at one factory comfortable workshops for these elderly people are described and they are permitted to put in on a piece-work basis as many hours as they feel equal to.

The subject of the alcoholic in industry will be dealt with in the next paper; but I will just mention the Gables Clinic in Johannesburg inspired by Dr. Alice Cox and run in conjunction with Toc H, which provides a Sunday-morning clinic for out-patients, and in-patient accommodation for about a dozen patients. The approach is medico-psychological on a group basis. Antabus is used in treatment. Of the patients who have passed through our hands at the clinic a group of workers from the mines, followed up by the mines at 6-monthly intervals for some 4 years now, show that approximately 30% fall into group A; that is to say, they have had no alcoholic relapse whatsoever since coming for treatment. Another 30% fall into Group B (with occasional relapses), but the management advises they are employable and when off work by reason of their alcoholism they are off for shorter periods at greater intervals. The 40% that remain are not helped by the techniques available at this clinic and we have to refer these people to work-clinics, where we hope that some effort is made to rehabilitate them.

I would like to commend Mr. Savage's scheme of training these people so that they can be accommodated in ordinary industry and not set apart in special sheltered workshops. I would like to congratulate Mr. Paterson on his invitation to us to ask the industrialist and the management in commerce to join us as members of the therapeutic team to assist workers disabled by physical or mental illness towards the fullest possible rehabilitation.

COMMISSION OF ENQUIRY ON MEDICAL RESEARCH

H.E. the Governor-General has appointed a Commission of Enquiry with the following terms of reference (Government Notice No. 1606 of 6 August 1954):

- (1) To investigate and report upon—
 - (a) the possibility of better co-ordination of medical research in the Union, possibly under one body;
 - (b) the possibility of bringing about such co-ordination under, or as part of, an existing statutory body;
 - (c) the necessity or otherwise of the establishment of a new independent body to co-ordinate medical research;
 - (2) if it is found necessary to establish a co-ordinating body, either as part of an existing statutory body or as a new independent body, to make recommendations regarding—

- (i) to whom such a co-ordinating body would be responsible;
- (ii) the constitution of such a body;
- (iii) the powers and duties of such a body;
- (iv) the manner in which such a body and its activities should be financed;
- (3) if the establishment of a co-ordinating body is not considered advisable, to make recommendations regarding the manner in which medical research should be co-ordinated; and
- (4) to make recommendations regarding any other matters relating to the above terms of reference.

The constitution of the commission is as follows: Dr. P. J. du Toit (Chairman), Dr. J. P. de Villiers, Prof. M. van den Ende, Dr. T. Alty, Dr. W. H. Craib, Dr. B. M. Clark.

ALCOHOLISM IN INDUSTRY

A PILOT PROJECT FOR THE CONSERVATION OF MAN-POWER*

BORIS SEREBRO, M.B., B.Ch.

Johannesburg

Modern man, in his everyday activities, is in constant conflict with a varied host of social and economic forces which form part of his environments, and which in the normal individual create varying degrees of stress. By a process of adaptation to the different situations as they arise in the orbit of the individual, these stresses are overcome and their effect is nullified, or at the worst balanced, and the individual is again in equilibrium with his environment. Thus there is a buffering of stress, with resulting protection to the individual.

On the other hand, we find that some individuals cannot adapt themselves to the stresses in their environment; then the results are serious, and the individual is swamped, and may ultimately drown in the quagmire of adverse situations. It is in such circumstances, where situations create their maximum effect on the individual, that we find varying degrees of mental change. This change is associated with an adaptation which is compensatory and in character abnormal and psychopathological. The individual may in consequence present features of varying degrees of mental aberration as manifest by acute anxiety states or neuroses. Where the individual is thus unable to adapt himself to his environment, mal-adaptive behaviour occurs. This behaviour is symptomatic of altered mental states, and the commonest means of alleviation is indulgence in drugs and alcohol, to which the individual becomes eventually conditioned and hence addicted.

In our type of society, the procurement of drugs by the individual is hazardous, owing mainly to legislative control, and with the exception of a small group such as doctors, nurses and pharmacists, who by virtue of their occupation are responsible for the dispensing of medicines to the public, addiction to drugs is significantly low. On the other hand alcohol is readily available, relatively cheap and equally effective for the purposes of addiction.

RESULTS OF ALCOHOLISM IN INDUSTRY

The results of alcoholism are felt in all aspects of human endeavour in general and in industry in particular. The effects on industrial progress are two-fold—intrinsic and extrinsic—with occasional overlapping, but in sum total they result in increased cost to industry.

Intrinsic effects of alcoholism on industry:

1. Lowering of health standards of workers
2. Increase in rate of absenteeism
3. Lowering of standard of efficiency
4. Increase in accident rate, often with tragic sequelae
5. Lack of interest in work and in the particular job

* A paper read in a symposium on Rehabilitation held in plenary session at the South African Medical Congress, Port Elizabeth, June 1954.

6. Lack of self-discipline
7. General moral decline with deterioration of labour-management relationship
8. Drift from job to job.

Extrinsic effects of alcoholism on industry:

1. Disharmony in the worker's home
2. Direct effect on the individual:
 - (a) Impairment of the nutritional state due to chronic gastric irritation with resultant loss of appetite and eventual malnutrition
 - (b) Fatigue
 - (c) Inflammatory changes in nerves
 - (d) Mental changes
 - (e) Generalized metabolic disturbances and liver damage
 - (f) Impairment of longevity
3. Impairment of the worker's personal and social outlook; its bad effect on the family
4. Effect of the high cost of alcohol on the budget of the worker
5. The worker cannot meet his daily domestic economic commitments. This results in the accumulation of debt with eventual litigation. In consequence the worker drifts to other regions in order to avoid legal proceedings.
6. The alcoholic addicted worker becomes an object of embarrassment to his fellow workers, which in turn leads to further anti-social traits. He loses interest in his workers' organization or trade union.
7. The alcoholic addicted worker 'gives the job a bad name'. The brunt of this is felt by his fellow workers and it makes recruitment of labour difficult for the particular industry or section of industry.

THE INCREASE IN ALCOHOLISM

Mr. S. P. Watson, the Superintendent of the Rand Aid institutions, whose experience, based on many years of practical research into the problem of alcoholism are very valuable, is of opinion that alcoholism is definitely on the increase in South Africa, though there are few available statistics on the subject.

At Northlea, the Rand Aid Association's Institution for Alcoholics (European), the number of beds for males has been increased from 40 in 1943 to 132 in 1952, and 55 beds for females were provided in 1952. Nevertheless the demand for admission is continually increasing. The male admissions during 1943-52 numbered 1,497 (of which 1,173 were from Johannesburg, the Reef and Pretoria). The female admissions in 1952-53 numbered 145.

In South Africa between 1920 and 1950 the numbers employed in the secondary manufacturing industry increased from 176,000 to 713,000, while in the transport and construction industries there have been significant

increases. From these figures, coupled with the opinions of heads of labour and management organizations, it is reasonable to suppose that far from decreasing the problem of alcoholism, the wider use of our reservoirs of man-power will, even under existing conditions, increase the wastage to industry through alcoholism in direct proportion to the increased use of our labour forces. Such increase will not only make the problem of alcoholism a major cause of wastage of man-power and efficiency, but will make it more difficult to check and control than it is at present.

There has as yet been no concerted attempt by industry to seal off this man-power leakage in South Africa. Admirable work has been done by various religious and secular agencies in combating alcoholism. The approach has been in the main therapeutic, for these agencies do not have the conditions which are necessary for the prophylactic treatment and hence the prevention of alcoholism. The State makes provision only for those who have gravitated to that level where they are fit only for the work colony or seek asylum in State mental hospitals.

PILOT PROJECT

With these factors in mind, about 2 years ago we began the project based primarily on the conception of the conservation of man-power in industry. The industry used for this pilot project was Transport, as our work brought us, in the main, into close contact with the personnel of the running staff (mainly drivers and conductors) in the employ of the Johannesburg Municipal Transport Department, an undertaking of the Johannesburg City Council.

The reasons for the choice are that we are closely connected with the intrinsic (work environment) and the extrinsic (social environment) phases of this industry; furthermore our clinical work has brought us into close contact with the workers and their families as well as with the officials of the labour and managerial organizations.

This particular transport undertaking gives a cross-section of the type of European workers found in our community. Its workers are drawn from all walks of life and from the various strata of society, and represent the various national constituents of our heterogeneous European community.

The stress-eliciting factors to which these workers are exposed are as follows:

<i>Factors specific to Transport Workers</i>	<i>Are the Factors Common to other Workers</i>	<i>Are the Factors Common to the Community?</i>
1. Monotony of driving	No	No
2. Shift work resulting in irregularity of meals and rest	only in shift workers	No
3. Changes in weather conditions:		
(a) Humidity	Yes	Yes
(b) Temperature	Yes	Yes
(c) Wind velocity	No	No
(d) Rain	Yes	No
(e) Lightning Storms	No	No
(f) Extremes of Temp.	Yes	Yes
4. Continuous starting and braking in peak hours due to traffic congestion	No	No

<i>Factors specific to Transport Workers</i>	<i>Are the Factors Common to other Workers</i>	<i>Are the Factors Common to the Community?</i>
5. Early rising or going to bed late by virtue of changing shifts or over-time	Yes	No
6. Effects of glare from stationary and moving motor vehicles	No	No
7. Effects of traffic signals and advertising lights	No	No
8. Effect of variable noise signals	Yes	No
9. Fatigue	Yes	No
10. Discourtesy from motorists in the case of drivers and from travelling public (on occasion) in the case of conductors	No	No
11. Lowered economic status	Yes	Yes

We felt that the above stress-eliciting factors were sufficient in themselves to produce those adverse circumstances which would result in mal-adaptive behaviour and hence in alcoholism. It was on this basis that we began our search for transport workers addicted to alcoholism; and we did not have to search far or very wide. We discovered cases in the first instance during the course of our routine work, but realized at an early stage that the value and the scope of our conservation work would be limited unless certain fundamental conditions were fulfilled. The primary and essential condition was complete co-operation between Labour and Management.

We approached the Transport Workers' Union and explained the object and the direction of our project to the late Mr. J. J. Venter, the General Secretary of this Union. He was enthusiastic and assured us of the closest co-operation of his organisation in this project; he informed us that this type of project was in the best interest of the Transport Industry in general. This was a valuable step forward in that Mr. Venter was well known to the rank and file of the workers in general and the transport workers in particular, and would thus be in the optimum position to encourage and direct workers to the conservation unit should they require this aid; furthermore, his organization would act in liaison with the management and the conservation unit.

At this stage we obtained the assistance of Mr. Frank Gait, the General Manager of the Johannesburg Municipal Transport Department. He likewise received the details of the project with enthusiasm, and stressed the importance of this work to his Department, particularly from the point of view of man-power and economy; he agreed to act in liaison with the Transport Workers' Union and the conservation unit.

We have thus reached a stage where there is unanimity of ideas and the fullest co-operation between Labour and Management on the subject of alcoholism. As a result of this co-operation the unit has been able to carry on with its conservation work as originally planned.

In practice, the following procedure has been adopted by Labour and Management:

(a) Both organizations through their inspectorate and officials would be continually on the look-out for alcoholism among personnel.



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(b) The Management would refer all such cases to the Labour Organization (the Johannesburg Municipal Transport Workers' Union), who would interview the person concerned and refer him to the conservation unit (thus making the Labour Organization primarily responsible for the welfare of its members in this particular aspect).

(c) The Labour Organization (Trade Union) would make its members aware of the facilities existing for alcoholics and would do its utmost to direct such individuals for treatment.

(d) Management would not summarily dismiss individuals found under the influence of alcohol while on duty, but such individuals would be given the option and opportunity of receiving treatment by the conservation unit in consultation with the Transport Workers' Union. Co-operation by the individual would find everybody sympathetic and helpful, yet failure to comply with the request of Labour and Management results in dismissal of such worker.

(e) Management would grant facilities to receive treatment daily from the conservation unit and then return to work. In practice it has been found that actual treatment requires 10 minutes at the most.

(f) The conservation unit would act in liaison with both Labour and Management. Where individuals who are receiving treatment fail to report for treatment (except for legitimate reasons) the unit would report such failure to a Personnel Officer (appointed with the approval of both Labour and Management), who would investigate the reason. If the reason for missing treatment is frivolous or unjustified, the matter would, in the first place, be handled by the Personnel Officer. If his approach proved of no avail, the matter would be reported to the Labour Organization (Trade Union). Should this final effort be of no avail, then the matter would be reported to the Management (the General Manager or a delegated officer) for action.

Labour and Management so far as possible take an interest in the rehabilitated individual—to keep contact

with him, so that he does not feel forgotten and ostracised. We have been fortunate in having heads of departments and union officials who, have taken an active interest in this conservation work and have indeed been a source of encouragement and help to these individuals.

This work has been carried out at a steady pace during the last 2 years and the unit has treated 30 cases of alcoholism, in every case successfully. That there have been no failures is due not to the medical therapy alone, but to the close co-operation of Labour and Management with the conservation unit in accordance with the scheme set out above.

The unit has accepted human material which heretofore was thought useless and to be ultimately rejected. Today we find that as a result of this treatment our cases show personality changes for the better. These alcoholics have lost that bloated and sullen melancholic look, they have learnt to laugh and smile, and those who were at first resentful have now become fully co-operative. There is no absenteeism from work on account of alcoholism or its sequelae, and these men are becoming an asset to their job and their homes. One man remarked '... it is the first time in my life that I have money in my pocket'.

In view of the success of this work we seriously suggest its extension to all the departments of the Johannesburg City Council, which would thus set an example to be copied and developed by industry and other interested bodies in Southern Africa

REHABILITATION: MEDICAL ASPECTS WITH SPECIAL REFERENCE TO REHABILITATION BY FEEDING*

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The principles of rehabilitation differ in no way from the principles of promotive health and preventive medicine as applied to the apparently healthy individual. The methods and techniques have to be adapted in the early stages of rehabilitation to the fact that, as implied in the prefix 're' in the word rehabilitation, we are dealing with an individual who has lost ground on account of disease and stress. He requires to be rehabilitated to his previous level, but then carried on to the maximum of functional efficiency which is possible for him. In other words, having been rehabilitated from a temporary low level resulting from disease or stress, he now needs the application of the principles of promotive health and preventive medicine so as to render him maximally resistant to the effect of further and recurrent stresses, whether these be primarily physical or primarily psychic (psychosomatic).

In order to discuss the principles of rehabilitation it is necessary to recapitulate some of the principles of promo-

tive health and preventive medicine. These were epitomised in the diagram which I prepared for the 1947 Congress and which was published in the *South African Medical Journal* in 1947 (22, 440) under the title 'Social Medicine and the Aetiology of Disease'. For our purposes today social medicine may be regarded as the total body of knowledge of promotive health and preventive medicine regarded both from the individual and from the community point of view.

The essential point of the diagram is the concept that aetiology is usually multiple and must be sought in the interplay of a triad of basic causative factors. This triad consists of (1) the genotype or inherited trends in the constitution, (2) favourable environmental or health-promotive factors and (3) unfavourable environmental or disease-provoking agents. The life-long interplay of favourable and unfavourable environmental factors on the genotype creates a constitution which may fluctuate slowly from healthy to unhealthy or *vice versa* over periods of years, and over briefer periods produce the fluctuations which we call health and disease.

The genotypical aspects of constitution are to a large extent not modifiable through public-health policy except

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through the long-term effects of eugenic education. Their importance is most obvious in the well-known heredo-familial diseases such as haemophilia and Huntington's chorea. It is, however, becoming increasingly apparent that the genotype is a basic contributory factor in such common diseases as idiopathic hypertension, diabetes and the allergies. There is increasing evidence that the real causation of these diseases is a negative balance between the favourable and unfavourable environmental factors operating on a basic inherited constitutional trend. In all 3 diseases there is some recent evidence that unsuitable diets are among the environmental causative factors, although obviously the role of diet must not be exaggerated.

On the other hand, the balance between favourable and unfavourable environmental factors is to a large extent controllable by public-health policy. The results of satisfactory control are reflected in the increasing life-expectation of those nations which have evolved a high level of individual civilization and leadership. On the other hand, economic privilege may bring its penalties. Some of these penalties can be illustrated in 2 examples. In the United States, after several decades of improving life-expectation, there has recently become apparent a decreasing life-expectation in males at middle age. This appears to be due to an increasing incidence of atherosclerosis and particularly of coronary atherosclerosis, leading to myocardial infarction. The reason for this change has been sought in 3 groups of factors: (1) change in dietary habit, perhaps an increasing consumption of fat, (2) decreasing exercise, and (3) emotional tension and strain. The answer to this problem has not yet been found but will probably lie in one or other or a combination of the 3 factors referred to. The other example is the increasing experience of paralytic poliomyelitis in epidemic forms in those communities with the highest economic organization, namely, North America and North Western Europe. This would appear to be due to lack of the immunity which develops in the less privileged communities from exposure to the virus at earlier ages in sub-clinical doses.

The favourable and unfavourable environmental factors which react on the genotype to produce a healthy or an unhealthy constitution and a favourable or unfavourable experience in relation to health and disease are the following:

	Health Promotive Factors	External Agents of Disease	
Elementary	Food	Infections	Acute
	Exercise	Parasitic Infestations	
	Sleep		
Social Man; Physical Hygiene	Warmth	Poisonous Arthropods	Recurrent
	Air	Physical Trauma	
	Cleanliness		
Educated Man; Mental Hygiene	Education	Chemical Trauma	Chronic
	Happiness	Psychological Trauma	

The importance of the various groups of external agents of disease has been modified to a remarkable extent in the last decade by the introduction of chemotherapy and the antibiotics. These therapeutic weapons have taken much of the sting out of bacterial infections and parasitic infestations. If similar weapons can be evolved against the pathogenic viruses and if DDT and related preparations can be effectively used against insect vectors of disease without seriously upsetting the balance of nature, then half of the external agents of disease will have been controlled to an extent which would hardly have been dreamt of a couple of decades ago.

Unfortunately, the stresses and strains of modern civilization and the failure of educated man to develop his moral and ethical sense *pari passu* with his intellectual development has led to a great increase in the importance of physical, chemical and psychological trauma as agents of disease. This trend is evident in the vast increase in diseases of stress such as the psychosomatic disorders and the collagen diseases and in the increase in neuroticism. But it is even more obvious in the morbidity and mortality of modern war, which now affects whole communities even more than their armies. There can be no doubt, however, that these unfavourable trends are easily reversible if we choose to develop emotional and spiritual maturity. That in turn will produce the sense of social responsibility which is necessary for the full application of the potential benefits of the universal provision of health-promotive factors.

Turning now to the 8 health-promotive factors classified under favourable environment, all but the first are readily available and applicable from our present physical resources. Food, however, may be an important limiting factor in the provision of a favourable environment in the future, and I have chosen therefore to give special attention later in this paper to the importance of food among the more strictly medical aspects of rehabilitation. Before going on, however, to consider these special aspects of food I propose very briefly to review some of the practical points in the application of the other health-promotive factors to problems of medical rehabilitation as exemplified in the convalescent pulmonary tuberculo-tic.

The developments of the last half-decade in the chemo- and antibiotic therapy of tuberculosis have been quite remarkable in their effects. It remains true, however, that for the prevention of tuberculosis and for the rehabilitation of the cured case of tuberculosis the proper provision of the 8 health-promotive factors tabulated above is vital. In fact tuberculosis as a disease may be regarded as due not to the presence of the tubercle bacillus in the body, since this is true of the vast majority of healthy urban dwellers, but to insufficiency of one or more of the health-promotive factors. I do not minimize the importance in the prevention of tuberculosis of preventing massive exposure and of the building up of immunity by controlled natural or controlled artificial exposure to the tubercle bacillus. But at the same time in the prevention of tuberculosis and in the rehabilitation of the cured case of tuberculosis it is impossible to over-estimate the importance of the provision of the health-promotive factors.

The tuberculo-tic during his sanatorium or hospital

treatment has been given 2 of the elementary health promotive factors in abundance as part of the therapeutic regime. He has or should have had an abundance of fully balanced nutritious food together with sleep to the limit of his capacity. In the latter stages of his stay he has been taught the principles of gradually-staged ambulation, and should by the time of his discharge be carrying out his walking activity. If his sanatorium has been well run the other health-promotive factors grouped under physical and mental hygiene will have been provided. In other words, he will have been for a period of many months submitted to a practical example of promotive health. If the social organization of his community is healthy he will be assisted in the process of readjustment to competitive life. Unfortunately, he is frequently thrown out into the stresses and strains of competitive life without adequate assistance. His finances have often suffered severely; he may have lost his job. His home may have been disrupted or his children may have become undisciplined during his absence. Almost certainly this task of providing for his wife and family and himself will be more difficult than it was before he went to hospital. In other words during his convalescence he will find it difficult to achieve environmental conditions even as good as those in which his health broke down. It is obvious therefore that he needs assistance from his community if his health is going to be stabilized, but the requirements for stabilization his health are no different from the health-promotive factors which, had they been applied a year or two previously, might have prevented the break-down in his health.

Looking into the future, it would appear that with the existing world-population the provision of the health-promotive factors in adequate quantity and quality from our existing physical resources is solely a matter of education, organization and social responsibility. On the other hand, the provision of some of these health-promotive factors might be threatened by a rapid increase in world population and of the 8 factors food would almost certainly be the earliest limiting one. There are those who say that with rationalization of production the world soil is capable of producing adequate food for a world population 3 times that which exists at present. There are others who say that the attempt to increase food production necessitates the use of land of marginal productivity with steadily decreasing returns, and that it is unlikely that the world can produce food of adequate quality for a population much larger than it at present has. I will not enter into this controversy, but it is clear that whichever view is correct there must eventually be a limit to the world's food production potential. The optimists hold that there is sufficient margin to allow us to rely on the eventual falling off in population-increase, which history has demonstrated to be a result of rising standards of living. Others say that the margin is so small that we cannot wait for such natural restriction of population but must take steps immediately to educate people towards family restriction. The difficulty of course is that those who have the highest birth-rate are those who are most difficult to educate in the philosophy, self-discipline and techniques of family restriction, whether it be through contraceptive or other means.

PRACTICAL POINTS IN REHABILITATION BY FEEDING

In South Africa there are some special aspects of the problem of rehabilitation by feeding which arise from our mixed population and the rapid evolution from primitive rural to more sophisticated urban conditions of living. These special considerations are vital to the nutrition policy of the country. First, a rapid increase is occurring in the extent of dependence of the country on wheat as a staple cereal. In the past the Bantu people looked to maize as their staple cereal, while the Indians looked to rice. Increasingly both Bantu and Indian people are joining the European and the Cape Coloured people in dependence on wheat as a staple. This arises from a number of influences. Maize is increasingly being used for animal feeding, while rice is increasingly difficult to import. The result is that prices tend to rise and temporary or permanent scarcities to appear. With increasing urbanization and industrialization more and more people are dependent upon sandwiches or parcelled foods for their midday meal. For this purpose wheaten bread is far superior in portability and 'keepability'. Finally, for the former reason and for a variety of other reasons there is an increasing tendency to regard the consumption of wheaten bread as a sign of civilization. It is quite clear that if this trend continues South Africa will become more and more dependent on imports for her staple source of calories.

There is a general tendency both in South Africa and throughout the world towards greater and greater consumption of highly-milled cereals at the expense of the natural whole grain. This trend applies not only to white flour and white bread but also to highly-milled mealie meal and polished rice. The trend towards highly-milled cereals is partly due to the great 'keepability' of the purified product, but we cannot get away from the fact that increasingly people regard the highly-milled product as more palatable. So strong is this trend that many nations have already accepted it as inevitable and have begun to reinforce purified cereal products with the minerals and vitamins which are taken out of them in the process of high extraction. American white bread, for example, is highly fortified with minerals and vitamins. In South Africa an attempt is being made at present through 'Bremer bread' to popularize low-extraction wheaten bread by using it as a vehicle for protein and other nutrients intended to compensate in part for the small intake of animal proteins. Thus casein or milk protein, fish meal and soya-bean meal have all been added at times to 'Bremer bread'.

This nutritional experiment has great possibilities, but its success depends upon unpredictable popular reactions. At present fortified or 'Bremer' bread is made only with brown flour and it is sold at a subsidized price well below that of white flour. Because it is cheap many people regard it as an inferior product whereas, of course, it is far superior to white bread in nutritive value. Unfortunately, the people who take this view are often those for whom the fortified and subsidized bread would be most valuable as a source of better nutrition. There is a certain snob value in white bread, and as is so often the case the snob spirit is most evident among the urban poor. Then further, there is no doubt that large numbers

of our population regard white bread as more palatable than brown bread. The enthusiasts for 'natural products' find this almost impossible to believe, and yet it is true. The experience of other countries has shown that it is a very deeply rooted preference which is often not shaken even by the most strenuous nutrition propaganda. In fact the United States of America has accepted that people in the mass prefer white bread to brown bread, and has introduced a general policy of fortifying white bread, at least with those vitamins and minerals which are removed from it in the process of milling of the wheat. It would be only one step further in this country to use white bread in addition to brown bread as a vehicle for protein enrichment. It will be unfortunate if this step is necessary, particularly as our wheat supplies are likely always to be poor. The possibility must nevertheless be visualized.

One of the most important steps which could be taken in this country towards the rehabilitation of the chronically-malnourished urbanized non-European worker, is the provision of a cooked meal once a day which is attractive, nutritious and filling. The Witwatersrand mining industry has lead the way in their feeding of the Bantu mine-worker. There is probably no better-fed non-European group in this country. The technique is the provision of adequate calories in the form of mealie-meal porridge, together with a stew containing meat or other protein and a variety of vegetables. One such meal a day will avoid serious under-nutrition or malnutrition whatever the workers' feeding-habits for the rest of the day may be. The need for provision of this sort is most evident in smaller industries and the employment of manual labour drawn from the migrant Bantu group. These workers often come to the city with the intention of earning and saving as much money as possible. Their knowledge of nutritional principles does not enable them successfully to make the transition from their traditional rural diet to a diet under urban conditions, and they are often lamentably malnourished and even incapacitated from work by malnutrition. This is well exemplified in the case of the adult scurvy often seen in Cape Town. The migrant labourer comes to hospital complaining of stiff and painful limbs, and is found to have gross painful induration of one or both legs, together with scorbutic gums and follicular keratosis. The painful induration of

the leg is due to haemorrhage into the intermuscular septum. Enquiry about his diet usually elicits that he is living largely on mealie meal, sugar and black coffee, with meat once a week in the week-ends. Fruit and vegetables are often not consumed at all. Thus it happens that in Cape Town, which was founded for the elimination of scurvy from the ships of the Dutch East India Company, is still rife with adult scurvy 300 years later. Education is of course the ultimate answer, but in the meantime this morbidity could be prevented by the simple expedient of the provision of one meal a day by the employer. This meal should preferably be provided free, because the Bantu migrant labourer is suspicious of any compulsory charge even for a meal. The employer would be amply rewarded in increased efficiency. The cost of preventable malnutrition among Bantu migrant labourers can be shown in the following quotation (Brock, J. F., 1943). 'During 1942 I had simultaneously under my care in hospital three native labourers from a quarry near Cape Town. All three were suffering from scurvy, protein deficiency, and the effects of vitamin-B deficiency. The cost of their preventable illness can be assessed as follows:

183 days in hospital at 16s. per day	=	£146
42 days at Convalescent Home at 4s. per day	=	8
Loss of wages for 11/14th of 183 days at 5s.	=	36

The community therefore lost 183 days labour at work of vital importance to the war effort plus a bill for some £150 in hospital charges, while the patients lost £36 in wages. When this matter was taken up with the responsible authorities, it was decided that in future these quarry workers should be fed at their work instead of having to purchase food at a small country store. It was estimated that they could be satisfactorily fed at 3s. 6d. each per week, so that to feed the three men for a year would cost £27 6s. This cost of prevention should be compared with the actual cost incurred in the treatment'. These figures would stand for today but need to be approximately doubled for the rise in the cost of living. The problem in Cape Town is as bad today as it was in 1943, and at least one of the three patients referred to has been back in the hospital with the identical complaint. This latter observation illustrates clearly the principle that rehabilitation is only a specialized aspect of promotive health.

REHABILITATION: THE HOSPITAL POINT OF VIEW*

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In 1952 at the National Conference on Handicapped Persons the theme under discussion was 'Holism in Rehabilitation' and the Secretary for Social Welfare in the foreword to his report stated that the choice of the

theme was decided upon as a partial antidote to the danger of multi-directional developments in the field during an age when rehabilitation is achieving a fashionable popularity which, if uncurbed in its influences, may well spell disaster.

At that Conference I drew attention to the many different hospital fields in which rehabilitation was

* A paper read in a symposium on Rehabilitation held in plenary session at the South African Medical Congress, Port Elizabeth, June 1954.

being carried out, and mentioned general hospitals, hospitals for the chronic sick, children's hospitals, neuro-psychiatric hospitals, mental hospitals and tuberculosis hospitals; I further pointed out that rehabilitation was also being carried out by hospital out-patient departments, municipal health clinics and through the Courts. I indicated the vast overlapping taking place in the providing of rehabilitation; responsibilities for its provision were divided amongst the Department of Health, the Department of Pensions, the Department of Social Welfare, the Provinces and the Municipalities. I was concerned at the tremendous overlapping because I wondered how, in the face of it, there could possibly be a unified approach to rehabilitation.

A unified organization with a unified policy and a concrete effort to utilize the most up-to-date methods of rehabilitation was, in my opinion, an immediate necessity and I advocated the establishment of a National Council on Rehabilitation for South Africa. By such a Council there would be brought about a constructive programme which would contribute much to the guidance of therapy in all its forms and in preventing the wastage of energy now being applied in the medical, educational and social field.

Those who are experienced in hospital administration know only too well that for the purpose of rehabilitation, a sick person requires more than one individual therapist. Rehabilitation must be carried out by the doctor in conjunction with the nurse, physiotherapist, social worker, occupational therapist, speech therapist and the vocational guidance officer. The hospital can do much to bring a person on to the road of recovery but the hospital superintendent must have very wide public relationships in order to bring the patient back to full productivity. The hospital should always work in the closest alliance with the Department of Social Welfare and the Department of Labour if it is to help not only towards an early discharge of the patient (i.e., towards an early recovery) but also in the future adjustment of the patient. Many a patient who has lost a limb, either hand or leg, may have to find other employment. An amputation is an easy operation, but the teaching of a new occupation is a different matter, and the bringing about of a psychological adjustment is a process which calls for able neuro-psychiatric and psychological therapy.

As a hospital administrator I do not plead that a hospital is the one and only place for this therapy but I do suggest that a rehabilitation section will be found the most suitable environment for the application of the rehabilitative process. Just as I would deplore the establishment of a geriatric hospital so I would deplore the establishment of a rehabilitation centre. We do need specialists, but narrow specialism can be of real danger and little help as compared with the vast benefit of team-work, or perhaps I should say, group medical application.

One has only to view the great National Institute of Physical Rehabilitation in New York run under the guidance of Dr. Howard Rusk to appreciate the meaning of the pooling of forces in seeking the best results. At this institution, run in conjunction with the Bellevue Hospital, one finds more out-patients than in-patients.

I mention this fact because it is not recognized enough that for rehabilitation it is not always necessary to hospitalize a patient and that a patient, whilst undergoing the treatment, can be kept in partial employment. As the whole basis of rehabilitation is to bring back the patient to normal productivity as soon as possible, the value of ambulatory treatment over non-ambulatory should always be borne in mind. In rehabilitation, therefore, it is necessary that hospital administrators should plan more for the requirements in an out-patient department than for those of a particular type of ward.

REHABILITATION OF CASES NOT PHYSICALLY DISABLED

Some people are inclined to assume that rehabilitation applies only to injured and physically-disabled people. It is therefore necessary to point out that there are various classes of people for whom it is necessary. These classes are (a) the acutely disabled, (b) the chronic sick and old aged and (c) the young chronic sick. Whilst these classes may require physical rehabilitation, it is also necessary to remember that there is a type of patient who requires very often only mental and psychological rehabilitation. The Transvaal Province, for instance, has recognized the latter class of patients, which we call the 'borderline' group of neuro-psychiatric patients, by establishing a hospital near Johannesburg, called Tara Hospital, where patients not certifiable under the Mental Disorders Act are admitted. At this institution, the therapeutic principle is in the form of social or group therapy in an environment which provides social amenities and group mechanisms for the management of the neuroses, especially those involving intellectual or physical handicaps. The environment fosters vocational confidence and full participation in all social amenities. The patient is helped towards domestic rehabilitation, and the preservation of family relationships is arrived at by encouraging family visits and granting elasticity in visiting hours and by providing regular social functions for both relatives and friends. After-care treatment plays an important part in the psycho-therapeutic process and in many a case where the doctor leaves off the social worker carries on the treatment.

In my recent travels overseas I have found generally that the best way of providing treatment for special types of cases is not by the erection of special hospitals for special diseases or forms of handicap, but rather by the establishment (e.g.) of a geriatric section or a section for physical rehabilitation as part of the general hospital set-up, so that all the facilities of the institution are available to the patient and so that the various skills of physician and technician can be pooled for the benefit of the patient.

Now I am very much in favour of group treatment, through which the medical, social and psychological fields will all be covered; but I wish to draw attention to a possible danger which might result from excessive zeal in team-work. In a recent discussion with my friend, Professor Guy Elliott, he gave me much cause to think when he expressed the view that whilst team-work is greatly to be appreciated and exercised, we must not let the patient find himself in a position where he says, 'Who is my doctor?' In other words, we must remember

the association of patient and doctor, and we must remember that the patient is still a human being and not a toy to be tossed about as children do at play.

We had in the Transvaal some years ago a special institution for the chronic sick and, although there was much sympathy and care devoted to the patients, I am certain that all who had to do with that institution will agree there was very little scientific rehabilitation. When the hospital was converted to a general hospital and proper screening was applied to the patients, more than 40% were discharged as social cases who could not in any way benefit by rehabilitation. Some were mentally infirm, some mentally defective and some physically beyond help. Today this institution is still known for its good work on the long-term case and supplying specialist investigation and treatment to every case needing it. Already large numbers of cases have been discharged, if not fully productive, then at least partially, even if that productivity is only to the extent of looking after themselves or of being able to be looked after at home and so avoiding the necessity of being kept in an expensive hospital bed.

In the opening paragraph of my address I mentioned the concern of the Secretary for Social Welfare over the possibility of multi-directional development. I wish to associate myself with the fear that the task of rehabilitation will be undertaken by too many people and that too many hospitals will be allowed to establish what they would call rehabilitation departments, without such bodies or hospitals having staff well versed in the require-

ments of such therapy. We have, of course, the physician, the occupational therapist, the social worker, specialists in physical medicine, orthopaedic specialists and others, and it is amazing how often, because of personal and individual selfishness or, rather, because of personal exclusiveness and the desire of each in his turn to claim the teaching or application of rehabilitation as his particular prerogative, that the best intended schemes come to no good. I think the first essential to a proper rehabilitation programme in a hospital is for the medical superintendent himself to take a keen interest in this aspect of the welfare of the patient so that he, through his external relations, i.e. his contact with other welfare agencies in the city such as the Departments of Labour and Social Welfare and the Courts, can bring about a smooth collaboration between them and the hospital staffs.

South Africa is far too small a country to allow of separate rehabilitation centres being created, and the expense which would have to be met in duplicating the facilities required would be something which could not be justified. We should therefore follow the world tendency to pool our resources. Labour, the Armed Forces, the Department of Health, Social Welfare and the Provinces should come together as a unified body with a unified programme that will be constructive. Individual attempts to provide this form of service would, in my opinion, be a waste of mental, physical and financial energies.

THE GENERAL PRACTITIONER'S VIEWS ON REHABILITATION*

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There is a tendency today to ignore the close relationship and personal contact that should exist between the patient and his family doctor. This relationship is being lost in the scientific approach to medicine, and the art of medicine is being overshadowed by the glamour of science. It will be a sad day when impersonal, scientific medicine, in its many branches, fails to realize the importance of the general practitioner as correlator between this science and humanity, especially in rehabilitation problems.

The general practitioner's view is that rehabilitation calls for a much broader interpretation than that usually conceded. He considers it as rehabilitation to the pattern of life as a whole, as opposed merely to that of the handicapped returning to employment in a wage-earning capacity, involving, as it does, the results of everyday mishaps with their immediate and latent mental, physical and moral effects on the patient and his relatives.

The general practitioner's part in rehabilitation may not be so spectacular as that met with in the more restricted field of industrial accident, requiring surgical

intervention; but in his everyday encounter with individuals to whom even minor mishaps may assume the nature of a major calamity, he can—and does—play an invaluable part in helping the patient to complete physical and mental recovery, albeit recognizing the fact that the physical may be more readily achieved than the mental, as evidenced by the recourse by patients to faith-healing, religion, nature cures and numerous other means.

If it is admitted, moreover, that the home is the patient's source of strength and inspiration, it cannot be too strongly emphasized that the general practitioner, with his access to it as trusted adviser and confidant—almost as one of the family—is in a unique position for assessing the need of and prospects for rehabilitation. Apart from these considerations, his immediate accessibility, his cushioning of the initial shock, his calm reassurance and his ability to put things in their proper perspective contribute greatly to the mental readjustment of all to a condition occasioning panic, distress and natural fears—a fact which is much appreciated by patient and relatives at such a time.

Furthermore, it is the general practitioner who has usually to initiate the course of action determined, and

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also act as intermediary where cases call for hospitalization or specialism, the patient and his relatives relying on him for explanation of progress and treatment.

The specialized approach to the problem of rehabilitation is complementary to that of the general practitioner, one accentuating the scientific and the other the humanitarian aspect; in fact there is considerable scope for more co-operation in the management of any case.

However, after a certain stage in the course of physical recovery—whether successful or not—the patient will be returned to his general practitioner's care, and treatment at home may involve a prolonged process of mental and moral rehabilitation. This is where the family doctor assembles all his forces of patience, tact, human understanding and sympathy to deal with the particular case involved, enlisting also the help and co-operation of those nearest to him.

THE FACETS OF REHABILITATION

We now come to the consideration of the various facets of rehabilitation. The general practitioner has a tremendous advantage in knowing, as the family doctor does, not only the patient's physical condition, but his whole background, social, domestic and economic, which factors are of considerable importance in the treatment and in assessing the prospects of rehabilitation.

For the treatment of any case, the establishment of confidence is an essential ingredient, and the family doctor, having previously established this position of trust, can start with advantage to build up the morale of the patient. For it must be remembered that the encouragement of willingness, courage, self-discipline, and self-help are the most essential requirements of rehabilitation.

Patients are of variable material; some are overwhelmed by their disability whilst others are stimulated to greater effort. Many have never been rehabilitated in the first instance for reasons of mental deficiency, emotional instability or illiteracy. We, as general practitioners, recognize that some individuals should never have been exposed to the situation that has caused their break-down, whether mental or physical.

The problem of rehabilitation is considerably simplified in those with sufficient incentive, for instance: those who like their work; those having pride of position, conscientiousness and ambition; the housewife with family responsibilities; the employer; the very young with natural resilience. All these progress quickly.

In those with insufficient incentive rehabilitation presents a more serious problem, for instance: those who dislike their jobs; the lazy; the morally irresponsible; the compensation-conscious type; the introvert, in an effort to concentrate attention on himself prolonging unnecessarily his recuperative effort; the elderly with waning enthusiasm for life and its troubles. In addition, economics, fear, privation, boredom and many other conditions may exercise an unfavourable influence.

Disruptive forces which have a detrimental moral effect and may therefore affect the chances of rehabilitation may be loosed by certain actions which are therefore to be avoided by the doctor, for instance: over-optimism concerning the results of treatment, which may

leave a patient in despair when the results do not fulfil expectations; unguarded or unwise criticism of treatment by a colleague in whom the patient has confidence; too much emphasis on caution for the future (where after-treatment or follow-up is necessary it must be carefully balanced to offset the tendency to become chronically introspective); experimental and expensive treatment with little commensurate benefit, especially if after an anxiously awaited consultation. Very few patients can accept a bad prognosis with stoicism. Excessive sympathy and sentimentality can produce unfavourable results.

The general practitioner must also be ready to counter the effects of irresponsible sensationalism from articles and advertisements in the press and radio, which tend to make the public as a whole more ill-health conscious and mislead many.

Now, whereas the acute case is the one we all like, offering, as it does, a chance for something spectacular and dramatic, and presenting very little of a problem for rehabilitation, it is, alas! more frequently the chronic case that one encounters—the patient who has to be fitted into the pattern of life.

Amongst the types of case which so frequently confront the general practitioner, and are self-evident in calling for rehabilitation in the broader sense, are the following: the chronic illnesses (ulcers, diabetes, cancer, tuberculosis and cardiacs); the nerve lesions (hemiplegia, deafness, blindness, poliomyelitis, epilepsy); the allergies; the deformities (including hare-lip and cleft palate); the elderly patient (senility and its problems); alcoholism; loneliness and domestic unhappiness; the disappointments of miscarriages and stillbirths; relatives after a death in the family; suspense in patients with liability to sudden death (cardiac and hypertensive cases); and many neuroses and psychiatric states not sufficiently severe to require specialist treatment; as well as accidents, operations and domestic upsets requiring the treatment of relatives as well as patients. In addition there are still many conditions—perhaps not all serious—which do not conform to text-book pattern and which even detailed technical and specialist investigation have not elucidated. These remain to be treated empirically by the general practitioner.

I have mentioned enough to show that rehabilitation is very much the concern of the general practitioner; yet I have only touched on the fringe of the problem.

The general practitioner stands in an intimate position in the family and his influence with his patients is considerable. He is the link with medical science and also the last bulwark against the too scientific approach to his patient's problem. Furthermore, he is in a position to stimulate a more philosophic outlook generally, for it is a matter of common observation that individuals in sickness and distress derive little inspiration and comfort from the materialism of the modern world and in spite of modern regimentation still seek individual and personal attention.

The importance of specialized clinics for certain cases is undeniable, but equally important in rehabilitation is the general practitioner's surgery and the general practitioner who is prepared to go to the patient's home.

The latter are appreciated much more by patients than some members of the profession realize.

In practice, the general practitioner will be called upon to go far beyond the science of anatomy, physiology and pathology. He has to study, in addition, the human mind, with his intimate knowledge of the patient and the patient's domestic condition, economics, fears, foibles and vices; and treat, not only with medical skill, but with general knowledge, faith and courage, as did the family doctor of old.

These essential qualities cannot all be taught, and I feel that the medical student from the outset should be able to obtain a better understanding than is in fact vouchsafed to him of what he is to encounter in general practice; for he will be called on to treat not only the disease but the patient as a whole, with individual mental and moral reactions. The understanding of these factors constitutes the very foundation of the *art of medicine*, and should raise it to its highest ideal in a cause to which we all dedicate ourselves, namely, *the relief of distressed humanity*.

SOME VOCATIONAL ASPECTS OF REHABILITATION OF THE HANDICAPPED*

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1. Introduction

At this very moment there is being discussed in the World Assembly of the International Labour Conference at Geneva, a group of problems broadly described as the Vocational Rehabilitation of the Disabled. This connotation of *Vocational Rehabilitation* would rather lead one to believe that the rehabilitation of the handicapped may be conveniently divided up into segments of different types of rehabilitation—medical, social, psychological, educational, vocational, economic and the like. If, however, we approach the problem on holistic grounds, we shall be surer of our footing and we shall appreciate that at no stage during this process which we are to discuss and which we shall presently try to define, is it possible to delineate one kind of rehabilitation of the handicapped from another; nor is it possible or even desirable to place these in different compartments.

When Field-marshal Smuts expounded his theme of Holism, he was pleading for an acceptance of a form of Gestaltism which in many spheres has come to be accepted as that philosophy most closely fitting our way of life; and if we accept that philosophy as basic to the rehabilitation of handicapped people, then we may be excused for discussing various aspects of this dynamic process separately, for it has facets which have their appeal to different people and on different occasions in a wide diversity of fashions. I ask no forgiveness therefore for discussing with you this morning *Some Vocational Aspects of Rehabilitation of the Handicapped*, on the assumption that the multipolar nature of the single concept of rehabilitation be not confused with a number of separate entities. That this problem must be seen as a whole was emphasized by Dr. E. A. Nicoll, consulting surgeon to the British Miners Welfare Commission, who wrote not so long ago as follows:

'A few years ago, the word 'rehabilitation' was practically unknown in the medical world, yet in 1935 a rehabilitation clinic was established in the Lanarkshire coalfield by that pioneer surgeon and great advocate of social medicine, Alexander Miller

of Glasgow. In an era when surgical virtuosity was generally regarded as its own reward, he was preaching the fundamental truth that virtuosity alone, particularly in orthopaedic surgery, was liable to be frittered away unless it was consummated in the fields of after-care and social service. This has been well known to that great orthopaedic surgeon Robert Jones of Liverpool, and to a small band of his brilliant pupils. It was also known to the insurance companies who had to pay the compensation costs of industrial injuries. It was vaguely appreciated by the small army of disabled miners who had to seek *non-existent light* work in a world where there was no legislation for resettlement, and it was never in doubt to many thousands of general practitioners who had to cope with the remote end-results of all this unconsummated surgical virtuosity. But in this era between wars there were, fortunately, a few pioneers to whom virtuosity was a means to an end. The target for them was not merely skilful reconstruction of a shattered limb nor yet its subsequent restoration to function, but the actual reinstatement of the patient in the *working community* at the highest possible level.'

2. Definition

It would be well to clarify our ideas of what rehabilitation is and what is encompassed by the consideration of vocational aspects of rehabilitation.

A large number of definitions have been put forward on different occasions and it seems to me that the one favoured by a Committee of the United Nations Organization is the most apt. It reads as follows: 'The Rehabilitation of the Handicapped is the restoration of the handicapped to the fullest physical, mental, social, vocational and economic usefulness of which they are capable.' This is of course a wide definition and is stated in terms of objectives at which to aim rather than services to be rendered. It includes spiritual and cultural values as well as material ones and is indicative of the team-approach without which, as will appear later, success cannot be achieved in any permanent measure.

The International Labour Organization has an interim definition of vocational rehabilitation which reads as follows: 'Vocational rehabilitation should be defined as that part of the continuous and co-ordinated process of rehabilitation which involves the provision of those vocational facilities, e.g. vocational guidance, vocational training and selective placement, designed to enable a disabled person to secure and retain suitable employment.'

* A paper read in a symposium on Rehabilitation held in plenary session at the South African Medical Congress, Port Elizabeth, June 1954.

3. A New Approach

The growing appreciation of the responsibilities and the rights of the handicapped has wrought a new approach to the problem. This is most aptly put in a statement embodied in a report on the Rehabilitation of the Physically Handicapped by a working party of representatives of the United Nations, the International Labour Organization, the World Health Organization and other international bodies:

'The time has long passed when a handicapped child or a disabled adult should be regarded as a subject for commercial exploitation and trained for the occupation of a professional beggar, or even to be considered as a mere object for charity. Modern methods of medical and sociological science have opened up a new horizon of promise for such individuals. But if this promise is to be fulfilled, and the handicapped person is to have his full chance of life, there must first be a new evaluation of physical disability, based on the following theses:

'Firstly, that the handicapped person is an individual with full human rights, which he shares in common with the able-bodied, and that he is entitled to receive from his country every possible measure of protection, assistance and opportunity for rehabilitation.

'Secondly, that by the very nature of his physical handicap he is exposed to the danger of emotional and psychological disturbance, resulting from a deep sense of deprivation and frustration, and that he therefore has a special claim on society for sympathy and constructive help.

'Thirdly, that he is capable of developing his residual resources to an unexpected degree, if given the right opportunities of so doing, and of becoming in most instances an economic asset to the country instead of being a burden on himself, on his family and on the State.

'Fourthly, that handicapped persons have a responsibility to the community to contribute their services to the economic welfare of the nation in any way that becomes possible after rehabilitation and training.

'Fifthly, that the chief longing of the physically handicapped person is to achieve independence within a normal community, instead of spending the rest of his life in a segregated institution, or within an environment of disability.

'Sixthly, that the rehabilitation of the physically handicapped can only be successfully accomplished by a combination of medical, educational, social and vocational services, working together as a team.'

4. The Aim of Rehabilitation

Modern industrial conditions and the new concepts of public service have brought about the greater necessity for the stabilizing effect of work. Moreover, the economic calls upon the breadwinner make it essential that he should work to the utmost of his potential capacity. In addition, therefore, to giving the handicapped a chance to become self-supporting, self-respecting and productive members of society, a properly organized rehabilitation programme will prove to be good business in a twofold manner:

(a) It will assist the State in its payments of palliative pensions and grants. During the financial year ending next March, the Union Government will pay an estimated amount of £20 million by way of assistance to the handicapped and aged of our country.

(b) It will go a long way towards alleviating the current shortage of man-power in the Union. Modern research in labour turnover shows that workers are inclined to move from one job to another with greater facility than they did in the days gone by; the unsettling effect of handicap is a matter for future research.

What is now required is to be able to canalize the path of the handicapped from a life of dependence on the

community and the State to one of independent personal achievement and service to his fellow men.

An examination of the economics of rehabilitation will show that handsome dividends are paid. Money is not spent on rehabilitation, it is *invested* in long-term dividend-paying stock. Proof of this is found in the case of P.B., who at the age of 15 years, whilst at school in Std. V, contracted typhoid fever 20 years ago. Complications resulted in his being removed to hospital, where despite medical treatment and nursing attention a paralysis of the left side left him with a seemingly useless left leg and left hand. A year had passed during his stay in hospital, but nature, without the catalysis of physical medicine and psycho-social counselling, had failed to bring about his cure. Now 16 years of age, P.B. was found to be eligible for a disability grant, and this was awarded without hesitation, for, after all, was he not a complete cripple, unable to support himself? P.B.'s family closed its ranks and gloried in the reflection of the community glow and State largesse that descended upon P.B. When he was 24, Cupid introduced him to Miss A.K., also crippled as a result of poliomyelitis and a beneficiary under the provisions of the Disability Grants Act. Two children later blessed their marriage. The Children's Act provides for maintenance grants to be paid in respect of the children and wife of a recipient of a disability grant; so the whole of P.B.'s family was really comparatively well provided for, since charity always supplements the contribution of the State. The present provision for such a family amounts to £18 10s. per month or £222 per year until the children are 16 years of age and £204 per year thereafter for the two disabled parents. A lifetime ending at say 66 years would in this instance have cost the State over £10,000. P.B. was, however, discovered in the garage in which he and his family were living and ultimately persuaded about 3 years ago to be admitted into a curative sheltered workshop. He lost his grants and allowances, much to his chagrin and with much opposition on the part of several charitable organizations; but today P.B. works a 40-hour week, has a wage-pocket of £8 10s. per week, and is a self-respecting God-fearing citizen whose children hold their heads high and say 'My Dad works'. From the point of view of the lowest level in values, P.B. is now a taxpayer instead of a tax-consumer.

Two factors spring to mind immediately when one considers the above case. The first is that with the new holistic approach, this state of affairs should never have been allowed to develop 20 years ago. The second is that despite the pleadings of P.B. and his wife that he had never worked, could never work and would never work; despite the opposition of the charitable organizations to the cancellation of the grants and allowances; and despite the resistance offered both consciously and unconsciously by this person during his early months in the curative workshop, his rehabilitation has been possible and he is today a smiling co-operative maker of furniture. I hesitate to add that a considerable amount of regeneration has taken place in the affected limbs.

5. The Total Programme

That medical direction is necessary to greater or less extent during the whole process of rehabilitation is I

think generally accepted. That direction is necessarily weighty in the acute or hospital phase and will possibly fade, wedge-like, to a periodic consultation or check-up as the patient approaches the stage at which he is ready for employment or work on his own account. In like manner, the vocational aspects will become deserving of more weight as convalescence proceeds. What then are the steps in the programme to be followed broadly in this process, other than those concerned with physical restoration?

Remembering that they may be in varying chronological order, or even at times simultaneous in their action and effect, we find that the following processes or steps are of importance to the patient on his journey back to employment:

- (i) Occupational therapy alongside the physiotherapeutic treatment undertaken.
- (ii) Vocational counselling in the hospital rehabilitation centre and the curative workshop.
- (iii) Vocational training.
- (iv) Selective placement in employment.
- (v) Follow-up of the worker.

6. Occupational Therapy

For some time occupational therapy was suspect in that it was alleged to be neither occupational nor therapeutic. But we have passed from the slipper- and powder-puff-making stage to a service in which the aims are well defined and frequently achieved. Broadly speaking we may see a dual function in this part of the programme. In the first place the occupational therapy may be functional and supplementary (or complementary) to the work of the physiotherapy department; it may even supplant it in later stages of convalescence. On the other hand this phase may have a definite and well-defined pre-vocational function in that a patient may without harm try himself out in this or that direction where he is uncertain of success; for example, a fitter with a Colles' fracture may be encouraged to work on a drill press and so recover his confidence in his own mechanical ability at the same time toning up the injured part. The best occupational therapy that can be given to a man is that which nearest approaches the use of tools to which he is accustomed; alternatively the tools he learns to use may be allied to the job he hopes to obtain when he enters the labour market.

7. Vocational Counselling

In the vast majority of instances, an individual who has been injured or ill will be able after optimum recovery to return to his pre-disablement employment or occupation. It may be necessary to adapt the conditions of work to meet the needs of the individual in some slight manner, but in general the restored person with the right approach and attitude will be adapted to his work fairly simply.

As in the case of fit persons, the aim of vocational counselling is to assist the patient who is unable to return to his old job or to one similar in making a wise choice for the future. There are certain fairly well defined traits and characteristics among men which within limits make them suitable for one type of calling and unsuitable for another. The total personality of the man, viewed in the same holistic spirit to which I have referred before,

is the major factor in adaptation to employment, and if we are able to approach this through an analysis of its parts—cognitive, affective and conative—then we shall assist in guiding our patient into the right job-channel. Factors such as health, family life, social attitudes, morale and the like are important factors which go to determine which way the occupational wind will blow. At all times, however significant may be the psychology of individual differences, we should remember that all men are very close to one another in their broad characteristics. Arbitrary motivation in choice of a career is a very powerful factor; yet it may lead to failure.

8. Vocational Preparation

Fundamental to all rehabilitative work in which human relations are disturbed or affected is the principle of restoring the patient to the community in the fullest possible membership at the earliest opportunity with the least possible segregation. This is none the less true in providing training for handicapped persons prior to their taking up employment.

Priority number one in the vocational preparation and training of a handicapped person for the open labour market is the acquisition of a skill which will convince the potential employer that he is worth while; the commencement of this training may well take place before the patient leaves his bed, as vocational counselling should certainly do; but it should be well motivated by the visions of the future and it should be well grounded on practical issues and pay little regard to the cultural values of which one would normally take some account.

A system of readjustment vocational training introduced in the Union for the benefit initially of ex-volunteers of World War II has now been extended to meet the needs of civilian disabled. It is as yet in the experimental stage.

For this purpose, the National Readjustment Committee and Vocational Board is empowered to authorize vocational training at State expense to any ex-volunteer or any European person who in consequence of physical or mental disability is unable to return to his pre-disablement job or calling or to take up such employment as is desirable without the provision of vocational training. Such training is decided upon after consultation at the local level between the applicant and a Placement Committee consisting of a physician, a social-welfare officer, and employment or readjustment officer and a factory manager, under the chairmanship of the Divisional Inspector of Labour. The function of this committee is to assist in the choice of training, whether it be at an institution (technical college, university, private school or by correspondence) or on the job by means of articles, learnership or apprenticeship; this latter has also been done through the services of the sheltered-employment factories which as will appear later are primarily intended for chronic cases. The disabled persons thus assisted in training since the end of the war run into several hundreds and include people trained in medicine, law, surveying, pharmacy, farming, dental surgery, fitting and turning, carpentry and joinery, quantity surveying, teaching, librarianship, telephone operating, millinery, tailoring, shorthand, typing and bookkeeping.

During the period of training the State pays the trainee a subsistence allowance for himself and his dependants, if any, in addition to paying all costs of tuition and other educational necessities. A grant for tools and equipment necessary for his calling is made at the end of the training period.

An example is L.W., who was a miner who suffered an injury necessitating the amputation of his right leg. He has been trained in law and is now completely re-established in the legal branch of a mining house, where his previous knowledge of underground mining conditions stands him in good stead.

Another example is Miss H.P., who was a shorthand typist in a large manufacturing concern when poliomyelitis left its crippling effect on her. After the effects had become more or less stabilized it was realized that she could no longer type effectively. A period of searching and counselling led to the belief that she might become an occupational therapist, a profession in which she had become interested. Fortunately she had the necessary qualification for University entrance and she is now being trained in that profession; that she will succeed has been shown in a trial period at a hospital under the close supervision of the head of the physical medicine department.

9. Placement in Employment

The employment of handicapped persons must be based on grounds other than charitable or sentimental. An employer should not be requested to employ a handicapped worker until it has been proved to him that the employee is able to meet the work-standards set for his fellows. Work-efficiency is a factor composed of several elements including quality and rate of production, accident rate, absenteeism. If the handicapped worker can meet the requirements of the job, there is no reason why his disablement should be a factor in considering his potential employment. This principle is embodied in the 'selective placement' of handicapped persons in work for which they are physically and vocationally fit.

Selective placement depends for its success on adequate job-analyses of forms of employment in different spheres so that the jobs are conceived as the performance of specific acts with their characteristic physical demands. The object of the analysis is then to break down the occupation into its component elements to ascertain what elementary or primary skills are necessary for the performance of that job in a successful manner. The record of the working conditions under which the job is performed complete the picture.

The capacities of the individual must be listed in a specific manner in order to match them to the physical demands of the job: the working conditions of the job must also be compatible with the physical condition of the patient. The mental requirements of the job-processes must of course also be taken into consideration.

Any idea, such as was current in the public services of many countries in the years gone by, that special jobs should be reserved for the amputee, the blind, the deaf, the one-eyed and so on should be frowned upon, for a number of reasons: they tend to emphasize the disability instead of the ability; they are based on wrong assumptions that all the blind are of similar pattern; they limit work-opportunity and they cultivate stigmas.

The placement of the handicapped differs in no way ideally from the placement of the non-handicapped. It is a problem of matching the total man to the job and, though analysis will help, trial and error will often be necessary.

10. Sheltered Employment

If it is found that a handicapped person is unable to meet the demands of the competitive open labour market, he may be eligible for employment in sheltered-employment factories or on community farm-settlements. The former are now in existence in the various large centres of the Union and in brief are factories and workshops in which the emphasis on the positive health, welfare and individual benefit is far greater than in normal industry. Medical services, welfare services and feeding services which are under the control of professional personnel are a feature of sheltered employment, which caters for cripples, stabilized medical and surgical invalids, blind persons, certain of the deaf and other physically and mentally handicapped.

Community centres are set up for the reception of persons suffering from epilepsy, tuberculosis and certain psychiatric complaints. Alcoholism remains a problem to which greater attention should be paid in the future.

11. Conclusion

In spite of some progress during this century, and notably during the last decade, our country lags behind many European countries and the Americas in many matters of rehabilitation and employment for the handicapped.

The idea of identifying complete physical fitness with ability to do a job will die hard. The coupling of certain disabilities with certain vocations will persist. Education and propaganda will be necessary amongst management, labour and the public to ensure that the future of the handicapped worker is secure and that his family foundations are well anchored. Only thus will handicapped workers become an integral worth-while part of the man-power sources of our country.

Dr. Henry Kessler states that he believes that 25% of the population of the world are physically handicapped. In our own country we have a population of 13 million. A big task awaits us in a combined operation for the vocational rehabilitation of the handicapped.

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THE ORTHOPAEDIC ASPECTS OF REHABILITATION

REHABILITATION AS A NATIONAL PROBLEM*

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You will remember the teaching in our student days that no London policeman who sustains a Pott's fracture, ever gets back to point duty. You must know that even today the injured man in our hospitals is usually dealt with at first by an inexperienced man. In this respect the American College of Surgeons reports that the injured man is not in the first instance usually under the care of one competent to take the serious decisions in the particular case. These early decisions are vital and usually spell the difference between prompt, correct treatment or the development of complications which postpone the early intervention required.

When the policeman has septic fracture blisters over an unreduced Pott's fracture-dislocation, he will be off work 3 times as long and end up with 3 times as much permanent disablement as he would have done with early, correct treatment. A moral obligation is on the doctor who treats him first. If he does not know how he is morally bound to call in a colleague who can show him how. If he waits a day the delay will cost hundreds, even thousands of pounds. Giving the patient the best possible attention on the first day is the essence of rehabilitation. It reduces the number who cannot ultimately regain normal health, strength and ability. In traumatic surgery the first chance is the best chance.

I recently saw a child with a simple fracture of the femur. Strapping extension on her leg had cut through her skin, tibialis anterior, extensor hallucis longus, extensor digitorum longus and tendo Achillis. The sloughs separated, the ulcers were skin-grafted and the foot had a Volkmann's ischaemic contracture. The correct treatment was amputation.

From the same hospital I saw a man with a closed fractured femur who, after 6 months in bed, had a pressure sore exposing his calcaneus, another sloughing through his common peroneal nerve and exposing the head of the fibula, his fracture being united with 60° of external rotation and 30° of forward angulation. He died of sepsis superimposed on pain and suffering and prolonged protein-loss.

From another hospital a man with a fracture-dislocation of the neck and paraplegia was referred after a fortnight to a neuro-surgeon, who had the first X-rays taken and sent on to the orthopaedic surgeons.

In one of our largest teaching hospitals a man had an amputation above the knee for compound leg injuries. After 3 months he was referred because he would not use an artificial limb, and it was found that his hip was still dislocated.

These cases illustrate that the primary decisions were not always taken by suitably trained persons.

I have said enough to indicate that in this matter of

traumatic work, we as a profession have reason to be humble in the face of past mistakes and errors of judgment.

In orthopaedics our mistakes live with us—our major error would be a failure to learn by experience. On the credit side, much reconstructive work is being done. Painful, stiff joints are being rendered mobile; tendons, bones and nerves are being more successfully repaired than ever before; deformed spines are being straightened mechanically and bone-grafted; weak spines are being braced or fused or re-educated more efficiently than is generally known. The team-work of plastic surgeon, orthopaedic surgeon, radiologist, specialist in physical medicine and the various therapists have developed a machine capable of far greater achievement than any isolated man. This recognition of team-work is basic in rehabilitation. The social worker, the placement officer, the limb technician and every member of the team must be inspired by the ideal of assisting his fellow man to full rehabilitation. The public requires education by well-planned propaganda; the medical profession itself, is largely oblivious to the possibilities. There are reservoirs of untouched work in this country. The public hospitals are mostly wrongly designed and wrongly used for dealing with accidents. In traumatic work 95% of cases should be able to resume their original activities. The lesson has already been learnt that the good result is quickly achieved and the bad result slowly. The longer a man is off work, the greater is his permanent disability going to be.

I now quote a few individual cases of what is being done for orthopaedic cases in particular:

1. A boy of 12 years arrived at the Hope Training Home in a wheel chair. His paraplegia arose from a transverse myelitis in infancy. The flexion-contractions of his hip and knees were largely due to living in a sitting position in a pram and later in a wheel chair. His knees were straightened out by capsulotomy, his one foot stabilized by triple arthrodesis, and his bladder incontinence managed with an appliance. He walked for the first time at the age of 13 years. Intellectually he was normal and he did well at school and passed his Commercial Matric at the age of 19 years. After a period of academic study and physical training at the School for Physically Handicapped at Kimberley, he is earning a good living and pulling his weight in the community as the secretary of a farmers' co-operative society.

2. A girl of 19 was admitted to Germiston Hospital and found to be totally incapacitated by obesity and lack of muscle power following an attack of poliomyelitis at the age of 2 years. On correct diet she gained in strength, lost 70 lb. of excess weight, and started using calipers and crutches. She is now earning £50 a month. For the previous 16 years she had been confined to bed, spoilt, and fed on puddings and sweets by sympathetic friends and family. We improved her power-weight ratio and encouraged her to help herself.

3. A man of 24 arrived in Germiston Hospital from S.W. Africa. One hip was fractured and still dislocated. The compound fracture of his tibia was healed, following much sepsis and septic arthritis of the ankle joint. The foot was in equinus. A reduction of the hip joint was performed 18 months after the accident.

* A paper read in a symposium held in plenary session at the South African Medical Congress, Port Elizabeth, June 1954.

combining it with a vitallium arthroplasty; then his tibia was lengthened, and finally his deformed foot was re-aligned by osteotomy through the ankylosed ankle. He was 6½ inches short on that leg at first, but after all this reconstructive surgery he had gained 4½ inches, leaving him with a deficit of 2 inches, which his surgical boot corrected. He has been working as an underground miner for the last few years and can be regarded as adequately rehabilitated.

4. Contrasting with these cases, I saw a man at the Government Limb Factory who had worn a steel spinal brace for 4 years and had come for a new one, ordered by a District Surgeon. Investigation showed that he had had a trivial spinal fracture originally. It had long since healed but he was now grossly incapacitated by splintage. He was drawing a military pension and regarded himself as incapable of doing a day's work.

5. A boy of 18 fell off a roof 3 weeks after commencing his apprenticeship as a carpenter; the fracture-dislocation of D7 paralysed his lower limbs, bladder and bowel. Laminectomy demonstrated the hopeless cord damage. Seven months after the accident I saw him being fed by a nurse with a teaspoon; he was fat, flabby and short of breath on exertion, and was not allowed to shave himself. He was treated extremely sympathetically but without the appreciation of how to tackle the problem of rehabilitation. You may be incredulous when I tell you that 3 weeks later, he could wash himself to the tips of his toes, put on his own boots and orthopaedic appliances, dress himself and manoeuvre himself to the edge of the bed, get his crutches, achieve balance and walk the length of the ward with a tripod swing-through gait. This lad is now completing his course as a radio-mechanic—a job for which he has a natural aptitude. With his 3-wheeled chair he travels miles into the country, visits friends, negotiates traffic and feels that life is worth living.

6. Last year a man crawled into my rooms on hands and knees and wanted advice as to what type of knee guards would be best in his case. Examination revealed that he had a spastic paraplegia, that he was 27 years of age and had had a Std. VIII education but had never done a day's work for himself and had lived on the floor in his sister's house and crawled about on the pavements outside on his hands and knees. He did not appear to be in the employable class. In the Johannesburg Hospital his legs were straightened by capsulotomy of both knees and stabilization of one foot, and with a pair of calipers on his legs he was able to walk for the first time in his life. The thing that constantly amazed him was that the ground was so far away. He very soon found employment in a clerical capacity and, although he is only doing a sedentary job, he is today rehabilitated to such an extent that he is even able to use public transport.

These cases that I have quoted are exceptions.

OBSTACLES TO REHABILITATION

In many areas individuals are attempting to apply the principle of rehabilitation and finding a host of obstacles. The victim of a severe injury requires assistance in bridging the gap between discharge from hospital and resumption of work. In hospital, medical, surgical and ancillary services were focussed to solve his particular problem, but when he is discharged home, often in plaster or on crutches, the next few months are unplanned. This period could be shortened or more effectively utilized and could be made a preparation for resumption of normal living. Instead he feels himself a burden to himself, family and community. Whose fault is this failure in rehabilitation? The surgeon working under stress has a new case in the bed vacated by this victim; the house surgeon is new to the job and lacks authority; the ward sister, compassionate person that she is, probably has the best idea of how he will make out at home. The physiotherapy staff, although anxious to help, is swamped with a high percentage of derelicts and undiagnosed cases receiving palliative therapy. The medical superintendent, working within restrictions of

ordinances and regulations, cannot begin to tackle this sociological problem. The convalescent patient should graduate from diversional therapy and routine physiotherapy to a full 8-hour day of work. If he wants to get well he must work and must regain the habits of body and mind associated with work. Admittedly the won't-works, the compensation claimants, the psychoneurotics and those in numerous other categories require sorting out; they can only be dealt with on a scientific programme designed to stop the wastage of money and life.

As a profession doctors are individually weak when it comes to solving a social problem of this type, and we are easily defeated in our isolated attempts at helping with rehabilitation. We get entangled in red tape; we do not understand the interdepartmental boundaries, and often we give up the unequal struggle and sign a certificate to the effect that the disabled person is entitled to a disability grant. The doctor in charge of an outpatient clinic is often too rushed to consider such cases in detail. These disability grants are fundamentally unsound when paid out to persons who have not been adequately assessed in terms of modern medical knowledge. There are of course many cases where there is no alternative to a grant. There are some people drawing invalidity grants who could benefit from treatment. By a process of careful screening it is possible that some of these recipients of grants may still be found suitable for rehabilitation. In Sheltered Employment work nearly 1,800 persons are kept in employment; they are able to face the world because they are earning a living. Some of them ultimately succeed in becoming so rehabilitated that they take their place in industry in the open labour market. It is anticipated that sheltered employment will yet prove a more effective rehabilitative measure in the future. Even very severe cases are capable of substantial rehabilitation.

PARAPLEGIA

At the Chamber of Mines Hospital, for example, we are familiar with the difficulties of dealing with paraplegic patients—one of the biggest problems in traumatic surgery. A number of cases, although still considerably paralysed from the waist downwards, have been rehabilitated to such an extent that they are back at employment doing useful work, often at salaries in excess of what they were drawing at the time of the original accident. There are isolated examples of what can be done when the principles of rehabilitation are applied but, needless to say, we are only scratching the surface and it needs impressive statistics to bring us and the nation as a whole to a proper appreciation of the problem in hand.

We, the medical profession, owe a duty to the country to draw attention to what can be done in this and other similar fields; otherwise some cases make an emotional appeal to the public, collect large sums of money and proceed overseas, chasing a miracle cure for the disabilities, which are in fact, often incurable but best dealt with by efficient rehabilitation in the country where the afflicted person must ultimately adapt himself to his surroundings. In this matter of disabled persons being sent overseas for rehabilitation, we must admit that we

have not adequately faced our responsibility; we have not publicized what can be done in this country nor have we organized rehabilitation work in such a manner as to satisfy the demands that are likely to be made. In this respect I am afraid the newspapers have played a part. One of my patients, who was a paraplegic, recently had a full page of newspaper devoted to describing his tragic condition, although he is so rehabilitated today that he is in fact again at work supporting his family and driving his own car. The newspaper claimed that he had been robbed of every worth-while reason for living.

After World War I the paraplegic problem was not particularly difficult, because the majority of cases died quickly with urinary complications; but with new drugs and better surgical techniques a much larger percentage survived after the last war, and in the United States for example there are now 2,600 paraplegic veterans—the great majority of them having been re-trained to walk with the aid of crutches and braces and having left the hospitals for jobs or further education. Apparently, however, the case-load of such patients in those hospitals in America has not decreased, because for every paraplegic case discharged a new paraplegic patient, disabled by a peace-time accident, has been admitted.

In this country accurate figures are not available but it is estimated that there are 8 times as many paraplegics from civilian accidents as there were from injuries during war time, in comparable periods.

The American United Mineworkers' Welfare Fund has a waiting list of hundreds of paraplegics waiting to get into rehabilitation units. In this country a complete Paraplegic Unit does not yet exist, but we are living in hopes and attempts are being made to influence the hospital authorities and the various voluntary organizations to get a unit started in the Transvaal. The average paraplegic patient requires about 6 months of training to get him to the point of complete self-care and reasonable ambulation.

When the idea of rehabilitation is mentioned there is always some criticism because the term is misunderstood. Some doctors fear that young patients would become chronic hospital cases if they mixed with old hospital cases who have suffered frustration and boredom and disappointment in hospitals not specially attuned to the rehabilitation idea, but experience has proved the contrary to be true. In the Neurological, Medical, Rehabilitation and Social Services Hospital in Minnesota for example, it is recorded that the programme was started in a ward of 130 neurological patients, all but 2 of whom were veterans of World War I and some of whom have not been out of bed for as long as 10 years. Nine months afterwards the original 130 patients were evaluated: 25 were so improved that they had been discharged from hospital and are now employed, and 40 others had been able to return to their homes capable of doing light work. Of those remaining in hospital 30 were ambulatory and undergoing an advanced phase of rehabilitation and 25 others were able to take care of their own normal daily needs. Only 10% of the entire group had failed to show worth-while permanent improvement.

From this type of experience we in South Africa can learn a great deal. We have many chronic neurological

patients in this country who could be rehabilitated to the extent of self-care and self-sufficiency in their own homes, with resulting financial saving and increased availability of beds.

REHABILITATION IN GENERAL HOSPITALS

Two years ago I studied rehabilitation units in England and became firmly convinced that medical rehabilitation *should be part of an established hospital service*. Every hospital should have its ratio of rehabilitation beds; in fact, the Hospital Council of Greater New York, taking into consideration this need for rehabilitation, has suggested that convalescent care requires 25% of the bed capacity of a general hospital. One may be prejudiced because a very much greater percentage of orthopaedic cases require further rehabilitative care than do medical cases, but even the physicians are stressing the need for convalescent beds in their work.

Experts tell us that in planning new hospital construction, the construction costs for the sections of the hospital required for rehabilitation are much lower than those required for surgery or medicine for example. The accent in such wards would be on 'function'. Every patient entering a rehabilitation unit requires assessment in terms of muscle-testing, range of motion of joints and the functional tests of a hundred different activities involved in daily living. We must know whether the patient can feed himself, dress and undress, look after his toilet needs, walk, travel, climb stairs, ramps and kerbs, and whether he can negotiate public transport. These things are essential in planning the vocational future of any patient with a residual disability. There is little value in teaching the man tripod gait or even normal walking until he is able to look after his own toilet needs, because he remains unemployable. If a man cannot be taught to travel to work, it is a waste of time giving him vocational training in work which requires him to travel. It is quite remarkable to see how a paraplegic patient or a patient very extensively paralysed by poliomyelitis can nevertheless very often with the aid of braces and crutches manage to negotiate traffic and use public transport. It is, of course, understood that by the time the patient has had his muscles tested, the ranges of motion of his joints assessed, and his activities of daily living tested, and then a conference held between the medical staff, various therapists, the social worker and the vocational counsellor, the programme for a 6-day working week can be worked out, based on the individual needs of the patient. Such a patient may spend 2 or 3 hours a day learning to walk and the rest of the time learning to use his hands and brains. As soon as he reaches maximum improvement the placement service comes into operation. After the patient has reached the peak it is necessary for him to try his wings outside the unit.

THE PHYSICALLY HANDICAPPED IN INDUSTRY

The physically handicapped person can, when placed in a proper job, hold his own in competition with able-bodied workers. In American studies 56% of the investigators found that the accident rate of the handicapped worker was lower than that of the able-bodied, 42%



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found that it was the same for able-bodied and disabled, and only 2% found that the accident rate was higher amongst the disabled workers than the able-bodied. The physically impaired person is not necessarily a handicapped worker if given reasonable job-placement. The disabled workers have relatively fewer disabling injuries at work and it is found that absenteeism is less and they are less likely to change their employment.

We must realize as a profession that the treatment of the disease or disability is only a segment of our problem. We must deal with the practical relationship of disability to economic, social and environmental factors. Our statesmen tell us that we are entering a phase of prosperity, an era of great individual opportunity, a period when a man can again better himself by his own efforts; if we pause to consider long-term economic planning we envisage a labour-shortage in this country as one of our basic obstacles. We need skilled manpower. We must conserve what we have, but what do the statistics show? In 1948, from industrial accidents alone, the actual time lost was 1,929,820 days plus an estimate of 1,872,570 days in respect of unreported accidents. Add to this the 12½ million days potential

due to permanent disablement, the lost time attributable to 1948 industrial accidents was 16,100,000 days. The wealth of the nation is going down the drain; it is erosion of man-power. If we add the chronic ill-health of young people, and if we add the degenerative diseases associated with neglect of elementary hygiene, and stress diseases, preventable infectious diseases, then indeed we can only conclude that the wealth of the nation is being eroded faster than the soil of South Africa.

In road accidents alone in 1953 the Union had 19,124 persons injured or killed. Including accidents from all sources approximately 60,000 persons were temporarily disabled by injuries in 1953. This does not include causes of disablement other than injury.

In the last 10 years of progress in South Africa, the turnover in commerce has increased from £74 million to £197 million, in industry from £98 million to £945 million, and in farming from £58 million to £184 million; and in secondary industry the employees 10 years ago numbered 479,000 and now there are 775,000 employed. The factors that have made this possible have been initiative, imagination, competition and hard work. It is time that we applied these factors to our medical and rehabilitation problems.

ASSOCIATION NEWS : VERENIGINGSNUUS

CLINICAL MEETING OF THE CAPE MIDLAND BRANCH

At the monthly Clinical Meeting of the Cape Midland Branch of the Medical Association of South Africa held at Port Elizabeth on 5 August 1954 Dr. James Miller presented an interesting case of pregnancy associated with congenital abnormalities of the pelvis and urinary tract. A fulminating pre-eclampsia necessitated the termination of the pregnancy by a lower-segment Caesarian section.

The discussion centred on the question whether this case was a true Naegele's pelvis associated with a complete spina bifida and sacralization of the last lumbar vertebra with torsion of the pelvis and sacrum.

Mr. F. H. Counihan discussed the urological abnormality, where the differential diagnosis was between a crossed ectopia or a double development of the kidney on one side with absence on the other; an I.V.P. showed good functioning of the kidney with some hydronephrosis, possibly caused by pressure of the foetus. The site of the ureteral openings would have to be demonstrated to evaluate the pathology.

Further investigations would be instituted after the puerperium. No similar combination of congenital abnormality has been found recorded in the literature.

Mr. Counihan presented two cases of substitute bladder. In his introductory remarks he stressed the necessity of a substitute bladder in operations requiring complete pelvic clearance. The alternative here was a wet colostomy, which very few patients could stand. As an alternative operation to sigmoid transplantation of the ureters, it showed a vast improvement in that the incidence of the three usual complications of the latter operation were greatly reduced or could be overcome. Once the ureters were transplanted into the sigmoid, the renal tract could only be studied by electrolytic changes and an intravenous pyelogram.

In cases of substitute bladder the ureteric anastomosis could be studied and possibly catheterized by cystoscopy. The first of the complications seen was recurrent pyelonephritis. This was greatly reduced in cases of substitute bladder, because the latter was an isolated segment of bowel with no faecal content. The second, hyperchloraemic acidosis, did not appear to develop in these cases or was of a very mild transitory character. The third complication was that of stenosis of the new anastomosis. This could easily be overcome by opening the new bladder and doing a meatotomy.

The speaker quoted the follow-up of cases originally done by

Gillchrist *et al.* and Harper. These showed the necessity for very careful bowel anastomosis. All the cases which survived became continent after 2-3 months, with a bladder capacity between 350 and 550 c.c. This would require an approximate 4-hourly catheterization, which the patient performs himself without difficulty. The catheter need only be socially clean as distinct from surgically sterile. Stress incontinence appeared occasionally.

Mr. Counihan then described the operation with its three main steps. The first step was the isolation of an 8-inch length of ileum together with the caecum and part of the ascending colon. This required complete mobilization of the ascending colon and hepatic flexure. The ileum and ascending colon were divided between clamps and the proximal loop of ileum anastomosed to the stump of ascending colon. This leaves the leash of ileo-caecal vessels intact to supply the new bladder, whilst the right colic artery is left to supply the remaining part of the ascending colon. The caecum and ileum now lie quite freely in the abdomen attached only by the mesentery.

The caecum is now rotated through 90° to lie in a transverse position on the level of the brim of the pelvis. The ureters are freed in the pelvis and brought anteriorly into the peritoneal cavity.

He found that the easiest method to do the anastomosis was to rotate the caecum through 180° along its long axis and to bring the ureters round its lower border to lie on what is now its anterior surface.

When the anastomosis is complete the caecum is again rotated through 180° and firmly stitched to the posterior abdominal wall. This makes the anastomosis extraperitoneal and gives good support to the bladder, enabling it to take a good weight of urine without sagging right into the pelvis. The stump of ileum will now be found to lie anteriorly and to the right and should be brought out through a small separate incision so that it lies in a straight line to the surface. Any redundancy should be removed. If it lies laterally he makes a point of obliterating the channel on its lateral side.

The method used is that advised by Gabriel in making a colostomy. If the ileum lies more medially, nothing is done. The patient is now ready for the third step, i.e. total cystectomy or clearance of the pelvis. If lymphadenectomy is to be performed this must be done before the bladder is fixed in its new position. The immediate post-operative care is that of any bowel anastomosis plus that of transplanted ureters.

Mr. Counihan then presented these two cases:

The first was a Native female who had suffered severe birth-trauma with a development of a vesico-vaginal fistula measuring 1½ inches in diameter and involving the internal sphincter and urethra. The rectum suffered a complete tear, with complete destruction of the sphincter. He had repaired the latter following a temporary colostomy and the patient now had full faecal continence. Five efforts at repair of the vesico-vaginal fistula were unsuccessful and a substitute bladder had been made. This was working perfectly satisfactorily and the patient was able to catheterize herself and carry on normally.

The second case was an elderly Native male with a massive papillary carcinoma of the bladder, which was obstructing the left

ureter and was associated with bladder-neck obstruction. The operation had been performed 3½ weeks previously, with total cystoprostatectomy and vesiculectomy. In this case it had been found impossible to rotate the caecum in the usual manner without obstructing the blood supply. The result was that the ileostomy in this case opened on the left side. This did not appear to cause any inconvenience to the patient, who was able to catheterize himself without difficulty.

In spite of the brief post-operative period and the poor general condition of the second patient, both patients were continent and seemed quite content with their present condition. Further investigations were due to be carried out to ensure good function in both kidneys and to check on any incidence of hyperchloraemic acidosis.

PASSING EVENTS : IN DIE VERBYGAAN

Dr. Anel I. Goldberg, of National Mutual Buildings, Church Square, Cape Town, who has been indisposed for the past 3 months, is now completely recovered and has resumed active practice.

* * *

Societe Internationale de Gastro-Enterologie. The President (Dr. Francisco Gallart-Mones of Barcelona) of the International Society of Gastro-Enterology (S.I.G.E.) has addressed a letter to the Medical Association of South Africa urging the formation in South Africa of a National Committee of Gastro-Enterology, consisting of a minimum of 6 members, including an 'official delegate' and his deputy, both of whom would be members of the World Committee of the International Society.

The next (3rd) World Congress of Gastro-Enterology is to be held in 1958 by the National Committee of the United States of America. It is proposed that members of the National Committees should hold office until the 1958 Congress.

The International Society was founded in 1935. Its first 3 presidents were successively Dr. Jan Schoemaker of the Hague, Dr. Pierre Duval of Paris, and Sir Arthur Hurst of London.

The above-mentioned letter from the President makes enquiries concerning a South African Society of Gastro-Enterology, or a Section of a Gastro-Enterology of a recognized Group.

* * *

Dr. J. D. Joubert, F.R.F.P.S.(Glasg.), F.R.C.S.(Edin.), who has been visiting urological clinics in Britain for the past 6 months, is returning to Cape Town in the Winchester Castle, which is due to arrive on 2 September. He will practice urology in Cape Town at National Mutual Building, 17 Church Square, Telephone 2-4661.

Dr. J. D. Joubert, F.R.F.P.S.(Glasg.), F.R.C.S.(Edin.), het vir die afgelope 6 maande urologie-klinieke in Brittanje besoek. Hy keer op 2 September in die Winchester Castle terug en gaan hom op blaas- en nierkwale toelê. Sy adres sal National Mutualgebou, Kerkplein, Kaapstad (Telefoon 2-4661) wees.

* * *

Dr. Alex Culliner, M.D., M.R.C.O.G., F.A.C.S., of Johannesburg wishes to deny most emphatically the current rumours to the effect that he is giving up his practice and proceeding overseas.

* * *

Dr. Maurice Nellen, M.D., has been appointed by the Federal Council as its official representative and delegate at the International Cardiac Congress in Washington from 12-19 September 1954.

* * *

Dr. Charles Berman, M.R.C.P., of the Mine Hospital, Maraisburg, Transvaal has been invited to visit the United States of America for the following purposes: (1) To attend the Gordon Cancer Research Conference of the American Association for the Advancement of Science, to be held at Colby Junior College, New London, New Hampshire, from 30 August to 3 September 1954—as one of the principal speakers. (2) To attend the 5th International Conference of Geographic Pathology at Washington—6 to 11 September—in order to act as a Reporter and to read a paper on Primary Carcinoma of the Liver, and to read two papers on clinico-pathological subjects. (3) To serve as visiting Professor of Pathology at the Pittsburgh University School of Medicine which is sponsoring his visit, for one month from 15 September.

Thereafter Dr. Berman hopes to visit some of the Hospitals and Research Institutes in other parts of America and Canada.

BOOK REVIEWS : BOEKRESENSIES

DREAMS

New Light on Dreams. By Max Serog, M.D. (Pp. 159. \$3.00) Boston: The House of Edinboro, Publishers. 1953.

Contents 1. Dreams as Physiological and as Psychic Phenomena: (a) The Dream Approached by Experimental Psychology; (b) The Dream as a Psychic Phenomenon of Understandable Motivations. Dream Dynamics. The Possibility of Dream Interpretation. 2. The Dream Structure: (a) Decentralization and Disintegration in Dreams; (b) The Primitive Mythic Thinking and its Significance for the Dream Phenomenology. 3. The Problem of Specific Dream Abilities: (a) The Question of Increased Mental Faculties in Dreams; (b) Creative Elements in Dreams. Dream and Art; (c) Premonition in Dreams. Predicting and Prophetic Dreams. 4. Dream Interpretation: (a) Symbols and Symbolism; (b) Sex Symbols and Sex Interpretation; (c) Psychotherapeutic Significance of Dream Interpretation; (d) Technique and Art of Dream Interpretation. 5. Resume. Epilogue. Bibliography.

In this interesting monograph the writer makes an attempt to approach the study of dreams objectively. The main ideas which he presents are these: In the dream primitive thinking prevails through the disintegration of rational, logical thinking. In order, therefore, to understand the dream, we must understand primitive

thinking, as found, for instance, in primitive tribes, in small children and in schizophrenics. The writer claims that this approach is better than Freud's complicated theory, which is objectionable from many angles.

The writer proceeds to show that the interpretation of dreams can be achieved adequately only through psychic understanding of each individual dream. And this process is as much an art as a science. In these days of the stereotyped approach to mental illness and of the apparent triumph of physical methods of treatment, it is encouraging to find a writer who still strongly champions the cause of psychotherapy, and to hear him say, 'The art of psychotherapy begins beyond its technique. Real psychotherapists always knew it, no matter what method they employed or in what theory they believed. They always knew that psychotherapeutic ability is more than technical skill, more than psychological knowledge, more than training and experience.'

This book can be recommended to all who are interested in the technique and the art of dream interpretation.

A.P.B.

MEDIAEVAL LEPROSY

Ten Lepers from Naestved in Denmark. A Study of Skeletons from a Medieval Danish Leper Hospital. By Vilhelm Møller-Christensen, M.D. (Pp. 160 with 119 figures. \$5.00). Copenhagen: Danish Science Press, Ltd. 1953.

Contents: 1. Bone Changes in Leprosy. 2. Location and Excavation of the Medieval Leper Churchyard at Naestved. 3. Ten Lepers from Naestved. 4. Osseous Changes in the Naestved Material. Summary and Conclusions. References.

The author, who is a Danish physician, exhumed the skeletons from a site known to be the burial ground of a Leper Institution which operated during the years 1250-1550. Ten of the best pre-

served skeletons were examined, and the findings recorded in detail. These show that the pathology of leprosy has not altered during the last 400 to 700 years. Even Barnetson's recent work at Pretoria, where he showed that the earliest bony changes consisted of nicking or tufting of the terminal phalanges, was confirmed.

The most interesting finding was the presence of atrophy of the anterior nasal spine. This was confirmed in 5 out of 7 living patients, and is given the name 'Bergen Symptom'. As the author states, 'This appears to be an early symptom, and if it really proves to be so, it possibly may be of importance to the diagnosis of leprosy as its presence can readily be ascertained by palpation or roentgenography.'

A.R.D.

CORRESPONDENCE : BRIEWERUBRIER

THE BARAGWANATH PREMATURE BABY UNIT

To the Editor: Drs. Kahn, Wayburne and Fouche¹ have done a great service to Bantu children and to Paediatrics in South Africa by publishing the first really comprehensive account of the care and prognosis of a large group of non-European premature babies. Their figures must be taken as a base line for any future surveys in South Africa.

Having recently had the pleasure of working for Dr. V. Mary Crosse at the 'model British institution' mentioned in their article, I should like to draw attention to certain points of comparison in their paper.

Comparisons of mortality statistics according to weight-groups are made between Bantu (Baragwanath) and European (Sorrento) premature babies. However, the average birth-weight of Bantu babies is lower than the average European birth-weight. Premature Bantu babies, therefore, are more mature weight-for-weight than European babies. This fact must necessarily be considered when comparing mortalities in the individual weight-groups.

The mortality rate is said to be lower at Baragwanath for 'emergency admissions' than at Sorrento, yet the authors state that '35 cases who were moribund on arrival and died before they could be weighed' are excluded from their series. Sorrento Premature Baby Unit takes cases from as far afield as 100 miles away and some of the infants are so far moribund on arrival that they die before being weighed. Their bodies are weighed post-mortem and an estimate made of their probable birth-weight. These figures are then included in the mortality statistics, and this must be so if reliable year-to-year comparisons are to be made.

Regarding 'booked cases' it would be interesting to know whether the authors include all hospital booked cases in their series (they are included in the Sorrento figures), or whether only those that reach the premature baby unit are included. If the latter were the case then many deaths in premature hospital-booked babies would have been excluded from the series quoted at Baragwanath.

Regarding the use of expensive equipment, it is well to remember that until 1947 Sorrento had been functioning for 16 years without incubators. A glance at their previous statistics² will confirm their view that expensive equipment is not a *sine qua non* for premature babies. Partitioning of wards to cut down the cross-infection rate requires some capital expenditure, but can hardly be classed as expensive equipment.

Dr. Lomax³ has written to your *Journal* asking whether any controlled investigation has been carried out to compare the mortality rates of premature infants fed early (say 12 hours after birth) with a corresponding number of babies fed late (say 24-72 hours after birth).

Gaisford and Schofield⁴ published the first full account of this method in the British literature in 1951. The method had, in fact, been described by Clement Smith in America in 1947 (as Gaisford and Schofield mention in their article), and it had, too, been used at Sorrento⁵ for a number of years at the time the Manchester article was published. Gaisford and Schofield pointed out that hitherto many deaths had resulted from asphyxia caused by a spill-over of ingested fluid from the oesophagus into the trachea as a result of the feeds given to premature babies before the swallowing

and cough reflex had developed. Since the introduction of late feeding these deaths had ceased to occur.

Further, it was shown that the weight-gain over birth-weight in the 'starved' babies was actually higher by the 22nd day than in those fed early. They also found that oedema was lost more rapidly and that no hypoglycaemia ascribable to the late feeding occurred. These observations I can confirm from experience at Sorrento.

Regarding the use of casein I would like to refer readers to an article by Crosse *et al.*⁶ in the current issue of the *Archives of Diseases of Childhood*, where it has been shown that the addition of predigested protein (in this case casein) to cow's milk is not one of the best preparations for the feeding of premature babies. Where mother's milk is unobtainable simple skimmed milk (half-skimmed dried milk) with added sugar would appear to be the most suitable preparation to date.

Again may I congratulate the writers on the very stimulating account of their work with premature babies at Baragwanath. It will serve as an excellent example to all workers in the paediatric field in South Africa.

W. Hatchuel

The Hospital for Sick Children
Great Ormond Street
London, W.C.1
30 July 1954

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MITRAL VALVOTOMY IN PREGNANCY

To the Editor: We were most interested in Dr. Bradlow's¹ comments on our paper *Mitral Valvotomy in Pregnancy*,² and it is most valuable to have his views. However, we feel that more careful reading would have convinced him that our views hardly conflict. For example we have never advocated mitral valvotomy for patients with right-sided heart failure. Also we did draw attention to the different ways in which mitral stenosis increases the risks of pregnancy and may manifest either pulmonary oedema or right heart failure.

We agree with Dr. Bradlow that pulmonary oedema is the prime indication for valvotomy during pregnancy but, as he himself says, it is often of acute onset and fatal. The trouble is that it is very difficult to know which patient will go into pulmonary oedema and which will not. Incidentally the term 'left-sided heart failure' is a thoroughly bad one and was only used by me in deference to our physician colleagues, most of whom regard the left auricle as part of the heart and its failure as one form of 'left-sided heart failure'.

As for the patients with pulmonary hypertension we hardly need tell Dr. Bradlow, who has seen many such operated upon by us, that clinical improvement after mitral valvotomy does not run parallel with a fall in pulmonary-artery pressure but precedes it. I have never seen a patient after successful valvotomy who did not

experience some improvement immediately, although the maximum benefit of the operation is always seen some months later.

It is misleading to speak of the 'hazards of a major surgical procedure' in connection with mitral valvotomy in women of child-bearing age, and moreover it is difficult to follow Dr. Bradlow's argument that doubts about the diagnosis as between mitral incompetence and stenosis should preclude operation. Surely one should regard such a state of affairs as all the more reason to operate since, if incompetence is proven at operation, the issue and the prognosis can be accurately assessed in the absence of these doubts. The operation itself is, as we tried to show, far from 'hazardous'. Incidentally 5 more pregnant women have been subjected to mitral valvotomy since our paper was published and there is still no mortality. Also the mortality for non-pregnant women in the child-bearing age remains about 3.5%. I do not consider that we have been 'particularly fortunate' with our results, and until the others who 'have been less fortunate' publish their experiences I must agree to disagree with Dr. Bradlow.

With respect I must submit that my friend, Arthur Morgan Jones has not had the practical experience of the results of mitral valvotomy in pregnancy that we in Johannesburg have had, and I am sure that in his own good time he will modify his views.

Further, may I point out that an unsuccessful cardiomyotomy for mitral stenosis does not, as Dr. Bradlow thinks, lose us the opportunity to empty the uterus. Why on earth should it? On the contrary it may give us the opportunity to do so with a clear indication and perfect justification.

Lastly let me assure Dr. Bradlow that the operation is not 'very rarely indicated as an elective procedure in right heart failure'. It is never so in our practice.

G. R. Crawshaw

Princess Nursing Home
Esselen Street
Johannesburg
7 August 1954

1. Bradlow, B. A. (1954): S. Afr. Med. J., 28, 659 (31 July).
2. Crawshaw, G. R., van der Spuy, J. C. and Wilson, V. H. (1954): *Ibid.*, 28, 496 (12 June).

SMOKING AND CANCER OF THE LUNG

To the Editor: Dr. H. A. Shapiro's article on Lay Propaganda contains an adverse criticism of the published work (mainly by Richard Doll and Bradford Hill) on the relationship between cancer of the lung and smoking. Many points are made, none of the serious ones being original, and they have been adequately dealt with elsewhere by authorities such as Richard Doll (in his Millroy Lecture) and J. Clemmesen.

Dr. Shapiro says '.... we should be on guard against being befuddled by figures', but this seems to have happened to him. He considers the frequency distribution of smoking habits in the two series—those with cancer of the lung, and those who did not have cancer of the lung but were matched with the cancer cases in other respects. He isolates the range of smoking from 1 to 24 cigarettes a day, and says 'we find that those with lung cancer account for only 75% of the subjects, whereas the controls without lung cancer amount to 83.3%. Over the range of smoking being considered, this clearly establishes that moderate smoking is commoner among persons without lung cancer'. He then follows with this deduction 'Indeed we can smoke up to 24 a day with impunity. In fact we could go so far on these figures as to say: A packet a day keeps cancer away!'

It is interesting to note that Rigdon and Kirchoff have fallen into the same pitfall as Dr. Shapiro in interpreting these figures.

Let us consider for a moment what we should expect to find in the smoking habits of two matched series of cases with lung cancer and cases without it. If smoking were completely unrelated to lung cancer, the proportions of light and heavy smokers would be similar in both groups. If smoking protected one from developing lung cancer, then cases with lung cancer would be relatively more numerous in the lighter smoking group and rarer in the heavier smokers. (In this instance, presumably, Dr. Shapiro would have concluded that light smoking induced lung cancer). If, on the other hand, smoking is causally related to the development of lung cancer, then we should find that lung cancer cases tend to be drawn from the heavier smokers in the population. The proportion

of cancer cases naturally would be less in the groups smoking few cigarettes, simply because the proportion of such cases is higher among heavy smokers. This is exactly what has been found, and the results are highly significant statistically.

In the original work a χ^2 test applied to the whole distribution gave a probability of less than .000001 that these figures could be a chance finding.

If Dr. Shapiro had not understood the nature and interpretation of the experiment it was unwise to criticize, in a public lecture, such well-known authorities as Bradford Hill and Richard Doll. By doing this he has lent himself to the propaganda he set out to deplore.

With regard to the question whether cancer of the lung is really increasing, ample evidence is quoted by Richard Doll that it is so. Recently J. Clemmesen of the Danish Cancer Registry has published elegant confirmation with statistics from Denmark. He draws this alarming conclusion in a paper entitled *Bronchial Carcinoma—A Pandemic*: 'It seems impossible to escape the conclusion from the studies reported that we are now facing the beginning of one of the major catastrophes in medical history'.

Ultimately the demonstration that any substance is carcinogenic to man depends on methods such as those used by Doll and Hill in the retrospective and the prospective inquiries, irrespective of the demonstration of their action in animals. It should be remembered that 200 years elapsed between the statistical evidence that soot was a carcinogen and the laboratory evidence that it was carcinogenic to mice.

Dr. Shapiro uses the phrase, 'A serious claim (based only on statistics)'. But a large proportion of scientific data are statistical and many laws are in their essence statistical. Especially is this true in the biological sciences.

Then Dr. Shapiro suggests that a projective inquiry be made into groups of smokers and non-smokers; at least two such enquiries are in progress. The preliminary results have now been published and confirm the relationship between smoking and cancer of the lung. The authority whom Dr. Shapiro quotes against the relationship between smoking and cancer—Dr. Hammond, of the American Cancer Society—has since changed his views.

Dr. Shapiro says that 'lay sources . . . need to observe a high ethical code and pay a great regard to truth and accuracy . . .'. The responsibility for misinterpretation in this instance cannot be blamed on the popular press.

Meanwhile, serious workers, using statistically designed investigations, have made another important advance in medical science.

Clemmesen concludes his article, 'It is true that we have no warrant of the effect until we know the chemical nature of the carcinogen, or further experiments are carried out, but we cannot wait, while men are dying by the thousands. Where were the warrants in the combat against epidemics in the past? Let no one believe that the attitude of the public will remain indifferent to us now responsible, when in one or two decades the extension of the catastrophe will become apparent to everyone. *Videant consules . . .*' It would seem unwise to ignore such evidence as has been brought forward, particularly since it clearly provides sufficient information to make it possible to prevent what is now becoming the commonest cancer in men.

A. M. Adelstein
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A. G. Oettlé
Cancer Research Unit, South
African Institute for Medical
Research

Johannesburg
5 August 1954

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Rigdon, R. H. and Kirchoff, H. (1953): Texas Rep. Biol. Med., 2, 715.

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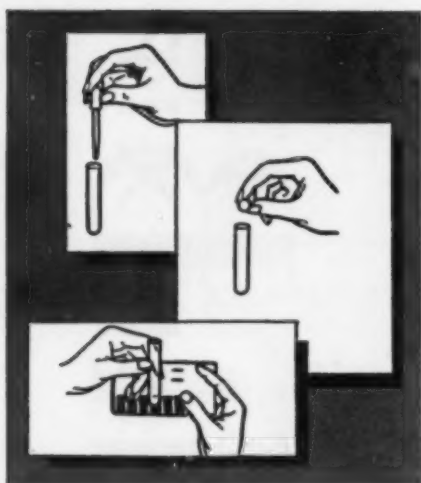
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Senior Resident Medical Officer	Far East Rand, P.O. New State Areas.	do.	do.
OR			
Intern	Far East Rand, P.O. New State Areas.	£240 per annum. Plus Board and Quarters or an allowance of £120 per annum in lieu thereof.	—
Senior Resident Medical Officer	Vereeniging (2)	£480 per annum. Plus Board and Quarters or an allowance of £120 per annum in lieu thereof.	Registered Medical Practitioner.
OR			
Intern	Vereeniging (2)	£240 per annum. Plus Board and Quarters or an allowance of £120 per annum in lieu thereof.	—

46692

Borough of Stanger

NOTICE NO. 17/1954

VACANCY: PART-TIME MEDICAL OFFICER OF HEALTH

Applications are invited, in terms of Section 94 of the Medical, Dental and Pharmacy Act No. 13 of 1928, for the position of part-time Medical Officer of Health for the Borough of Stanger at an annual remuneration of £75.

The appointment is subject to the approval of the Minister of Health, and the successful applicant will have to enter into a contract with the Council in terms of Circular No. 197 (Health).

A copy of the Contract may be inspected at the Town Clerk's Office, Stanger, during office hours.

Applications for the position endorsed 'Contract No. 17/1954—Part-time Medical Officer of Health', and giving full particulars of qualifications, etc., must be in the hands of the undersigned not later than 12 noon on Tuesday 31 August, 1954.

By order,

Robt. J. Gibson
Town ClerkMunicipal Offices
Stanger
2 August 1954

THE WELLCOME RESEARCH LABORATORIES

Applications are invited for an appointment at these laboratories to carry out research in the Department for Virus Diseases, which is being considerably expanded. Work in the first place will be directed to the development of a vaccine against Poliomyelitis. Applications should be graduates with training and preferably, with previous experience in virology, but a medical or veterinary qualification is not essential.

Applications, giving full personal particulars, including qualifications and experience, should be sent to the Director,

WELLCOME RESEARCH LABORATORIES

Beckenham, Kent, England

from whom further details may be obtained

Kimberley Hospitaal, Kimberley

HONORÊRE BESOEKENDE MEDIESE STAF— VAKATURE VIR HONORÊRE RADIOLOOG

Applikasies word ingewag vir gekwalifiseerde praktiserende Geneesheer om die aanstelling in die vakante betrekking as Honorêre Radioloog op die Honorêre Mediese Staf van die Kimberley Hospitaal.

Applikasies moet geadresseer word aan die Mediese Superintendent, Kimberley Hospitaal, Posbus 618, Kimberley.

D1502

Kimberley Hospital, Kimberley

HONORARY VISITING MEDICAL STAFF— VACANCY FOR HONORARY RADIOLOGIST

Applications are invited from qualified Medical Practitioners for appointment to the vacant post of Honorary Radiologist on the Honorary Medical Staff of the Kimberley Hospital.

Applications should be addressed to the Medical Superintendent, Kimberley Hospital, P.O. Box 618, Kimberley.

D1502

NOORD-WES KAAPLAND: PRAKTYK EN MODERNE HUIS TE KOOP

Prys van £1,000 vir praktyk sluit spreekkamer-meubels, instrumente en geneesmiddels in.

Prys vir huis £3,000, of naaste offer. Groot verband kan op huis gereël word. Alleen £800 tot £1,000 moet kontant afbetaal word. Res op maandelikse terme.

Sal Afrikaanssprekende geneesheer pas. Bruto inkomste laaste finansiële jaar £2,600. Een aanstelling waarskynlik oordraagbaar. Doen aansoek A.V.X., posbus 643, Kaapstad.

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Provincial Administration of the Cape of Good Hope

UNIVERSITY OF CAPE TOWN: JOINT MEDICAL STAFF FOR GROOTE SCHUUR AND OTHER TEACHING HOSPITALS

VACANCY

1. Applications are invited from registered Medical Practitioners for appointment to the following post:

Medical Practitioner, Grade D (Assistant Medical Superintendent) with salary on the scale £1,200x50—1,500 per annum.

2. The conditions of service are prescribed in terms of Hospital Board Service Ordinance No. 19 of 1941, as amended, and the regulations framed thereunder.

3. In addition to the scale of salary indicated a cost-of-living allowance at rates prescribed from time to time by the Administrator is payable to whole-time officials and employees. The present rate is £352 per annum for married and £110 per annum for single persons.

4. The Joint Medical Staff is required to serve jointly the Provincial Administration of the Cape of Good Hope and the University of Cape Town.

5. The successful candidate will be required to occupy, free of charge, an unfurnished house or quarters provided at the institution or, alternatively, if a house or quarters are not available, to occupy a house approved by the Department in respect of which the Department will contribute an amount of not exceeding £180 per annum towards the rental.

6. The successful candidate, if not already in the Hospital Board Service, will be required to submit satisfactory birth and health certificates.

7. Application must be made on the prescribed form (Staff 23) which is obtainable from the Director of Hospital Services, P.O. Box 2060, Cape Town, or from the Medical Superintendent of any Provincial Hospital or Secretary of any School Board in the Cape Province.

8. The completed application forms should be addressed to the Director of Hospital Services, P.O. Box 2060, Cape Town, to reach him not later than 18 September 1954.

M127260

Peri-urban Areas Health Board

ASSISTANT MEDICAL OFFICER OF HEALTH

Applications on the Board's official application form are invited from registered medical practitioners possessing a recognised Diploma in Public Health or State Medicine for the post of Assistant Medical Officer of Health on the salary grade £1,020x£60—£1,380 per annum plus a temporary cost of living at Public Service Rates for married persons (at present £234 per annum) and £58 16s. per annum for single persons. The commencing salary may be a notch within the grade depending on the experience of the successful applicant.

The salary grade has been approved by the Minister of Health but the appointment of the successful applicant is subject to the approval of the Hon. the Administrator and the Minister of Health.

The successful applicant must become a member of the Joint Municipal Pension Fund (Transvaal) if eligible.

Application forms and further details are obtainable from the Chief Personnel Officer, Room 222, Maritime House, 153 Pretorius Street, (P.O. Box 1341), Pretoria.

Applications, accompanied by certified copies of not more than three recent testimonials, must be submitted to the Chief Personnel Officer not later than 12 noon on Monday, 23 August 1954.

H. B. Phillips
Secretary/Treasurer

P.O. Box 1341
Pretoria
(78/1954)
3 August 1954

Natal Provincial Administration

VACANCIES: REGISTRARS, DEPARTMENT OF ANAESTHESIA AT EDENDALE AND GREY'S HOSPITAL

Applications are invited from registered Medical Practitioners for appointment to the posts of Registrar in Department of Anaesthesia at Edendale and Grey's Hospital.

Salary is on the scale £720—840x60—1,020 per annum and a cost of living allowance is payable at the following rates:

Married £320 per annum.
Single £100 per annum.

Grey's Hospital is recognised by the South African Medical and Dental Council, and the Post at this Hospital is recognised for the F.F.A.R.C.S. and the D.A.

It is anticipated that in the near future Edendale Hospital will be in a similar position.

Applications should be addressed to the Director of Provincial Medical & Health Services, P.O. Box 20, Pietermaritzburg from whom further particulars can be obtained.

AD8282

Provincial Administration of the Cape of Good Hope

HUMANSDORP HOSPITAL, HUMANSDORP

VACANCIES: HONORARY MEDICAL STAFF

Applications are invited from registered Medical Practitioners for appointment to posts of Honorary Medical Officers at the Humansdorp Hospital, Humansdorp.

The appointments, conditions of service and remuneration attached to the posts shall be subject to the provisions of the regulations promulgated under provincial Notice 553 of 1953.

Applications must be addressed to the Medical Superintendent, Humansdorp Hospital, P.O. Box 117, Humansdorp, to reach his office not later than 13 September 1954.

A. J. van der Merwe
Medical Superintendent

Humansdorp Hospital
Humansdorp
5 August 1954

M191513

Provinsiale Administrasie van die Kaap die Goeie Hoop

(AFDELING HOSPITALE)

HUMANSDORP HOSPITAAL, HUMANSDORP

VAKATURES: ERE-MEDIESE PERSONEEL

Aansoeke word ingewag van geregistreerde geneesher vir aanstelling in die poste van ere-Mediese beampies by die Humansdorp Hospitaal, Humansdorp.

Die aanstellings, diensvoorwaardes en besoldiging verbonde aan die poste, is onderworpe aan die bepalings van die regulasies afgekondig by Provinsiale Kennisgewing 553 van 1953.

Aansoeke moet gerig word aan die Mediese Superintendent, Humansdorp Hospitaal, Posbus 117, Humansdorp om sy kantoor nie later as 13 September 1954 te bereik nie.

A. J. Van der Merwe
Mediese Superintendent

Humansdorp Hospitaal
Humansdorp
5 Augustus 1954

M191513

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Provincial Administration of the Cape of Good Hope

HOSPITALS DEPARTMENT

HOSPITAL BOARD SERVICES: VACANCY

1. Applications are invited for the following vacant post:

Institution	Post	Emoluments	Closing Date	Applications must be addressed to
Livingstone Hospital, Port Elizabeth	Medical Practitioner, Grade B	£720x40—960 per annum	3.9.54	The Medical Superintendent, Livingstone Hospital, Port Elizabeth.

2. The conditions of service are prescribed in terms of Hospital Board Service Ordinance No. 19 of 1941, as amended, and the regulations framed thereunder.

3. In addition to the scale of salary indicated a cost of living allowance at rates prescribed from time to time by the Administrator is payable to whole-time officials and employees. The present rate is £352 per annum for married and £110 per annum for single persons.

4. The successful candidate, if not already in the Hospital Board Service, will be required to submit satisfactory birth and health certificates.

5. Application must be made on the prescribed form (Staff 23) which is obtainable from the Director of Hospital Services, P.O. Box 2060, Cape Town, or from the Medical Superintendent of any Provincial Hospital or Secretary of any School Board in the Cape Province.

6. Candidates must state the earliest date on which they can assume duty.

M127261

Siekfondse van die Suid-Afrikaanse Spoorweë en Hawens

Aansoeke word ingewag van geregistreerde mediese praktisyns vir aanstelling in die ondervermelde betrekkinge:

- (1) Spoorwegdokter, Tounsvrivers: Salaries £1,456 per jaar.
- (2) Spoorwegdokter, Port Elizabeth, 'B': Salaries £1,825 per jaar.
- (3) Spoorwegdokter, Port Elizabeth, 'G': Salaries £776 per jaar.
- (4) Spoorwegdokter, Pretoria-Noord: Salaries £785 per jaar.
- (5) Spoorwegdokter, Knysna: Salaries £360 per jaar.

Volle besonderhede in verband met die aanstellings kan verkry word van:

- (1) Die Distriksekretaris, Wes-Kaaplandse Distriksiekfondsradaad, Kamer 718, Security Building, Exchange Place, Kaapstad.
- (2) en (3) Die Distriksekretaris, Kaap-Middellandse Distriksiekfondsradaad, Kamer 116, Mutual-Geboue, Hoofstraat, Port Elizabeth.
- (4) Die Distriksekretaris, Oos-Transvaalse Distriksiekfondsradaad, Scheidingstraat, Pretoria.
- (5) Die Distriksekretaris, Kamer 116, Mutual-Geboue, Hoofstraat, Port Elizabeth.

Sluitingsdatum vir aansoeke: 15 September 1954.

P. J. Klem
Hoofsekretaris

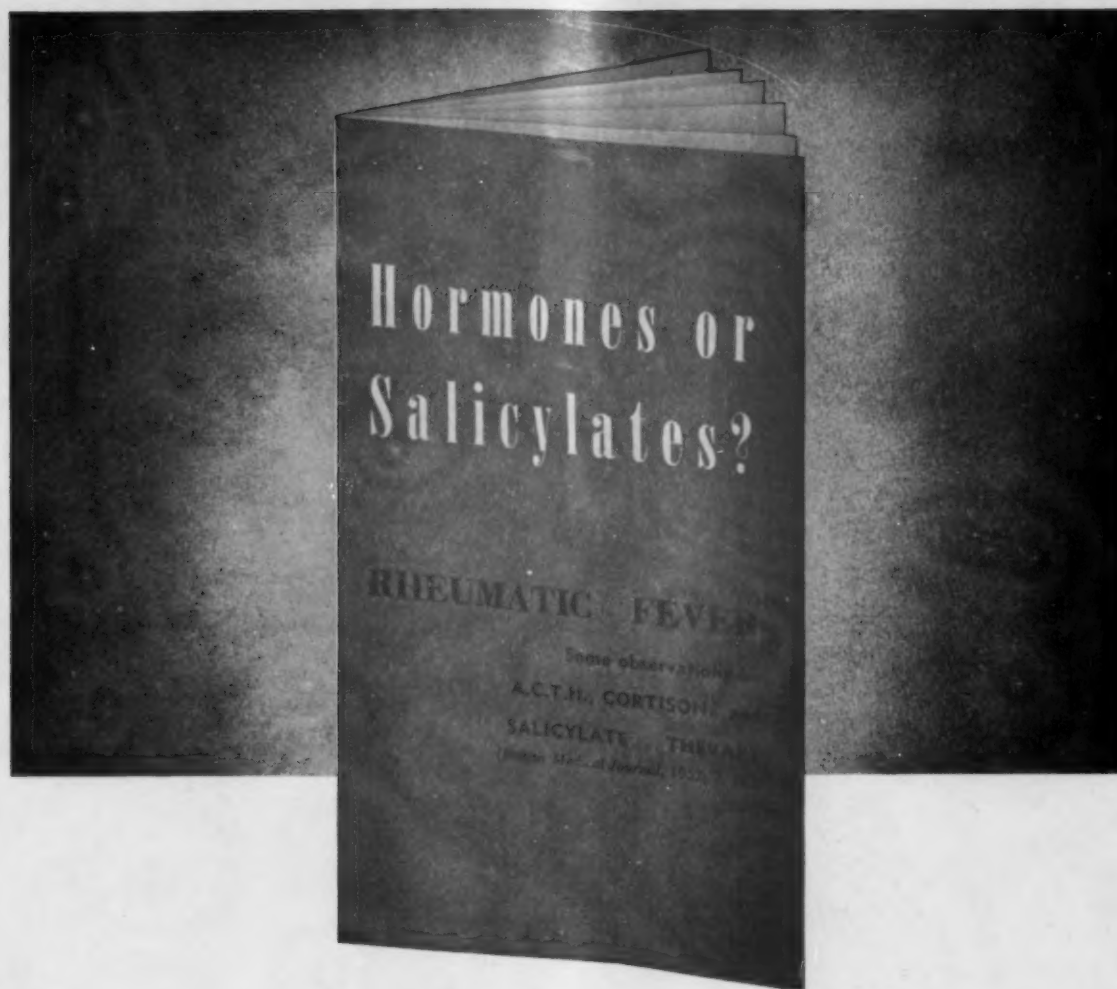
Johannesburg
21 Augustus 1954

ASSISTANTSHIP

Assistant required for a Mission Hospital providing scope for Surgery, Obstetrics and General Medical Work. Preferably single. Reply: Medical Superintendent, P.O. Bushbuckridge, E.Tvl.

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Examining couch upholstered vianhide: Condition perfect, £12. Apply A.V.Y., P.O. Box 643, Cape Town.



Evidence has been building up that salicylates (in the BERMIDE formula) act in a similar manner to A.C.T.H. It is interesting to note that the report of the treatment of Rheumatic Fever published in the British Medical Journal (1952, 2, 582) supports this evidence.

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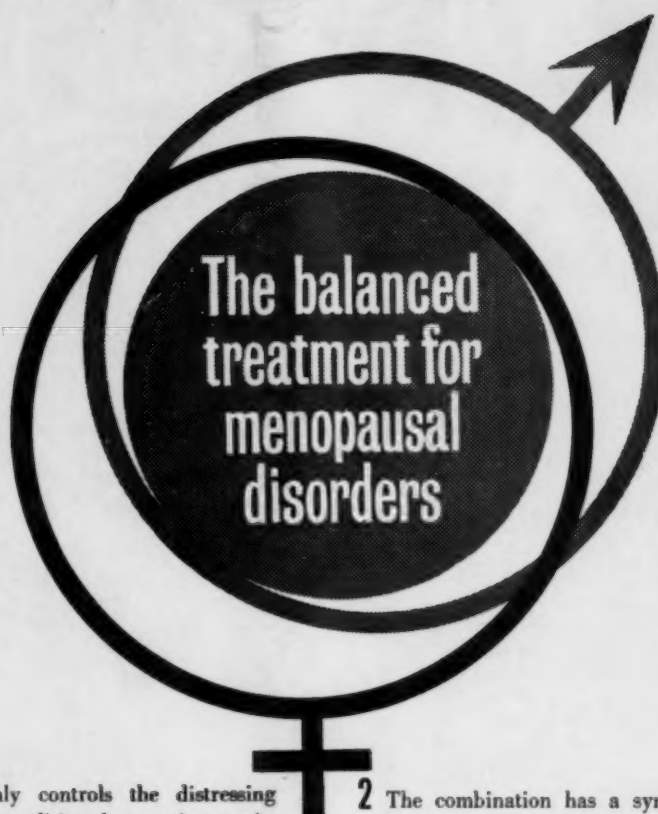
The Pan Pharmaceuticals Company, P.O. Box 4247, Johannesburg.



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